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SOME CASES OF PNEUMONIA OF UNCOMMON TYPE.[1]

By C. JOYCE, M.B. (Melbourne),
Kelmscott, Western Australia.

THE cases which I wish to report, occurred within a small area and in a few weeks. I present them to you because the physical signs are unique in my experience and illustrate the versatility of influenza and its complications. There had been an outbreak of influenza in the district of moderate severity and the pneumonia occurred as complication.

Clinical Histories.

CASE I.—A man, aged fifty-five years, was first seen on July 10, 1924. He gave a history of malaria twenty-six years previously and of recurrences. He had had several illnesses since then, the last being an attack of gall bladder trouble a year ago. This was relieved by operation. The health was good until the day before I saw him when he complained of shivers, headache and malaise. On July 10, 1924, he was flushed and had an irritating cough. He had no sputum. The respirations numbered 38 in the minute, the pulse rate was 96 and the temperature was 39.4° C. (103° F.). The lungs seemed normal, but for a few râles at the level of the seventh rib on the right side in the anterior axillary line and at the right base posteriorly.

On July 11 and 12, 1924, severe rigors occurred and these were followed by profuse sweating. On July 12 the resonance was impaired over the lower half of the right lung posteriorly and as far as the nipple in an anterior direction. Breath sounds were absent over this area, except for some moist sounds in the areas already mentioned. The vocal resonance and the vocal fremitus were diminished. On the administration of quinine the malarial symptoms disappeared, but the general condition remained much the same, except that the temperature declined and was about 37.8° C. (100° F.) morning and evening. On the fourteenth day of illness Dr. Webster saw the patient; the condition was much the same and the lung condition unaltered. We explored the chest, but the syringe remained empty. On the eighteenth day of illness numerous moist râles appeared over the right base. There was scarcely any sputum. At no stage of the illness did I hear the bronchial type of breathing.

Four weeks after the onset of illness there was still impaired resonance at the right base, the breath sounds were normal. There was *erythema nodosum* on both legs. Painful nodes were present from the knees to the ankles and they all disappeared, except two, one over the centre of each tibia. He is now (eight weeks after the onset of the illness) in Perth Hospital suffering from these lesions.

CASE II.—A widow, aged seventy-one years, was first seen on July 10, 1924. She had a troublesome cough with profuse sputum and moist sounds, heard plentifully over both lungs. The respirations numbered 52 in the minute, the pulse rate was 100 and the temperature was 39.4° C. (103° F.). She was inclined to be delirious. The next day I received a telephone message that she was better and I did not see her again until July 14, 1924. I then found that the bronchitis had disappeared, but that the right lung exhibited the same signs as those described in Case I.

[1] Read at a meeting of the Western Australian Branch of the British Medical Association on October 15, 1924.

The lower two-thirds of the right lung were very dull on percussion. Vocal resonance and vocal fremitus were diminished and a few moist râles were scattered over this area. The patient was delirious for the first week, regained her mental equilibrium and in the third week passed into a somnolent condition, having to be awakened for nourishment. The temperature fell and gradually reached normal on the nineteenth day. When almost convalescent she also manifested *erythema nodosum*, the eruption being limited to the right leg and disappearing in three weeks.

CASE III.—A girl, aged nine years, was first seen on July 21, 1924. She had been ill for two days. Three weeks previously she had undergone an operation for the removal of tonsils and adenoids and had not been "quite the thing" since. Her illness had begun with cough, vomiting and severe headache. The temperature was 39.5° C. (103.2° F.), the respirations numbered 56 in the minute and the pulse rate was 116. The right lung was dull posteriorly nearly to the apex and to the level of the third rib in an anterior direction. Breath sounds were absent over this area. Vocal resonance and vocal fremitus were diminished. The temperature remained at about the same level for a fortnight and then fell gradually in three or four days to normal. The patient afterwards had discharge from both ears, though only slight. Pain was felt in one ear. There is still some discharge from the ears at intervals, but otherwise the patient is doing well. At first I was suspicious of the presence of a foreign body in the lung.

CASE IV.—A married woman, aged thirty-five years, thought she had contracted influenza three days previously. Her temperature was 39.4° C. (103° F.) for six days and then declined, reaching normal on the eighth day. The lower lobe of the right lung manifested a similar condition. Convalescence was rapid.

CASE V.—A single man, an athlete and footballer, aged twenty-one years, had influenza and spent a few days in bed. A week afterwards on July 31, 1924, he returned to work, but after a few hours felt very ill and returned to bed. The same afternoon he was very flushed, had a troublesome cough and complained of severe pain in the right side in the axillary line. His temperature was 39.8° C. (103.6° F.). There was friction over the seat of the pain and a few crepitations could be heard at the right base posteriorly. There was no bronchial breathing or impaired resonance. A few hours later I received a telephone message that the temperature was 41.1° C. (106° F.) and ordered sponging with warm water. In spite of repeated spongings which always reduced the temperature for a time, a similar high temperature was recorded daily for six days and then it fell from 40.6° C. (105° F.) in the morning to 38.4° C. (101° F.) at midday and to normal in the evening without more than a slight shock or sweating. Not till the sixth day did I hear bronchial breathing and for two days after the temperature reached normal. The patient was kept in bed for another ten days on account of a very slow and weak heart action and slow resolution of the lung. Until the sixth day the physical signs were similar to those described above.

CASE VI.—A man, aged fifty-nine years, was first seen on August 4, 1924. He had been ill for some days and had a very troublesome cough with scanty sputum. The temperature was 38.9° C. (102° F.), the respirations numbered 44 in the minute and the pulse rate was 120. He had a few moist sounds scattered over both lungs, except over a patch at the posterior base of the left lung where breath sounds were absent. The temperature reached normal on the thirteenth day of the illness by a slow lysis and the lung had cleared by the eighteenth day. The patient was allowed to get up, but three days later he was worse and I found the temperature 39.4° C. (103° F.) and signs of commencing pneumonia at the right base. Next day there was some impairment of resonance at the right base and he was removed to hospital in Perth.

CASE VII.—A delicate child, aged two years, had pneumonia twelve months ago. She was seen by a doctor in Perth and a diagnosis of bronchitis was made. She was first seen by me on September 1, 1924, when I found the whole of the right lung consolidated. Intense tubular breathing was present. A few moist sounds were heard over this lung, but more over the left lung. The temperature was 40° C. (104° F.) the respirations numbered 60 in the minute and the pulse rate was 156. The patient was very ill for a fortnight and the temperature gradually declined. The general condition improved and the child was taking nourishment well. A week later it was very peevish and refused nourishment. The child was taken to the Children's Hospital and died on the evening of its arrival there.

Comment.

In the first six cases there was present a lung condition which I had not seen previously and which I do not understand. In ordinary pneumonia we think it easy to understand that the consolidated lung should convey to the stethoscope sounds originating in the bronchial tubes, yet in these cases we have consolidated lung failing to do so. The almost complete absence of sputum was a feature of the cases uncomplicated by bronchitis and the persistent hacking cough was a feature of all. The unusual duration of the disease in most of the patients and the absence of apical intensification of breath sounds were also peculiar.

Treatment.

In regard to treatment I hold that we cannot be too particular in the matter of securing as complete rest as is possible from the beginning of the illness. I order my patient's attendant not to allow him to turn in bed without assistance. When the patient is lying on the back a pillow under his knees helps to diminish restlessness. Too much stress cannot be laid upon the importance of rest, for we have to consider that nearly all if not all fatal results are due to a failing heart muscle and this weak muscle must be saved all possible taxes on its failing vitality. We must secure rest in every possible way. When the patient is restless, he is soothed by sponging with tepid water and this helps him to sleep. Rest for the digestive system is necessary. In acute illness the digestive system is "on strike." The gastric juice or rather the gastric contents are devoid of hydrochloric acid and food, if taken, is not digested. In the absence of acid and the digestive function, food put into the stomach can only putrefy and become converted partly into ptomaines, leucomaines and so forth. I can only attribute the truly striking difference in the results since I discontinued feeding these patients, to the fact that the human organism is able to contend successfully with the toxins of the bacteria responsible for acute illness, such as influenza and pneumonia, if it is not at the same time asked to deal with toxins produced by undigested food in the alimentary tract. During the febrile stage my patients are allowed water, lemon and orange drinks only. This has been continued in some instances for fourteen days with the happiest results. The average duration of water diet would be six or seven days, light nourishment would be given for three or four days and then a return would be made to ordinary diet. The results of water diets are seen in a declining temperature and the sudden crisis with profound shock is never seen, a gradual crisis

is rare and the temperature falls as a rule by lysis. Delirium if present in the early days of illness, abates and generally disappears after forty-eight hours and the patient sleeps. Rarely do I need to administer hynotics. Instead of the patient becoming daily weaker physically and mentally, as I remember only too vividly, there is a gradual amelioration and improvement to be noticed and this has led to recovery in every instance (totalling nearly one hundred) in which this method had been followed. It is many years since there has been a fatal result except in patients who failed to adhere to the method or in pneumonia complicating some other disease. One such disease was typhoid fever, another was acute atrophy of the liver and another pneumococcal meningitis.

To secure rest pain must be relieved and this must be done in the way which is easiest for the patient. For pleuritic pain morphine may be given and the hot water bag is easy for the attendant to use and entails the minimum amount of disturbance for the patients. I am proud of the fact that I have never burdened my patient with any of those pipe clay jackets now so much in favour with the public. I think that they should be relegated to the age of superstition to which they belong. Rest to the patient's mind and relief from anxiety are also secured when the patient is informed that everyone gets well without food and he will feel better day by day (perhaps suggestion helps). I had to give rest to the mind of an Italian by feeding him on agar jelly until a compatriot arrived.

Post Scriptum.

The first patient (Case I.) after a month in hospital returned home with a few nodes still swollen and inflamed. One of these suppurated and yielded *Bacillus lactic ærogenes*. He is now (December 10, 1924) almost well, but some thickening of the periosteum is evident.

NASAL SINUSITIS AND GENERAL MEDICINE.[1]

By HUBERT M. JAY, M.B., B.S.,
Honorary Aural Surgeon, Adelaide Hospital.

THE object of this short paper is to call attention to the great prevalence of infection of the accessory nasal sinuses and its varied manifestations.

The disease is one of peculiar interest to the general practitioner in that its symptoms are easily misinterpreted, in which case treatment is directed against the resulting pathological states and not against the disease itself. This may more readily occur if, as is so frequently the case, the suppurative focus in the nose causes less local discomfort than do its remote effects. It must be remembered that some sufferers from chronic nasal suppuration are on quite good terms with their malady and do not appear to recognize the need for treatment. The remote effects mentioned may be classified as follows: Those affecting (i.) the respiratory tract, (ii) the digestive tract, (iii.) the visual apparatus, (iv.) the auditory apparatus, (v.) the general health of the individual, indicated by various signs and symptoms of toxæmia.

In the first group (respiratory tract) one of the most important affections is pharyngitis. This is always a distressing symptom of chronic sinusitis and causes a definite change in the pharyngeal mucous membrane. The latter becomes dry, glazed and crusted, appearing as if varnished. The pharynx becomes extremely irritable and inflamed, the most prominent symptom being continual hawking and clearing of the throat. It is quite the usual thing for patients suffering from this type of pharyngitis to complain bitterly of their sore throat, but to make no mention of nasal discharge. The appearance of the pharynx, however, is unmistakable and should not fail to put the observer on the right track.

The larynx also is involved and a typical chronic laryngitis developes, with swelling of the mucosa, redness of the cords, pain and aching in the region of the larynx, associated with inability to use the voice for any length of time. In conditions such as these, needless to say, local treatment has but a temporary effect unless the true cause be discovered and removed.

Pulmonary symptoms are common, the patient having an incessant cough and profuse yellow expectoration. This, especially in association with loss of weight and general malaise (as is the rule rather than the exception), frequently gives rise to a diagnosis of pulmonary tuberculosis or at the best of chronic bronchitis. The point cannot be too strongly emphasized and I would urge you to spare no effort to obtain a report on the condition of the nasal accessory sinuses in those cases of chronic expectoration of purulent material in which the lung signs do not seem to be sufficiently pronounced to account for the whole trouble.

In mentioning asthma I am well aware that it is unsafe to dogmatize on its relationship to sinus disease. Some observers hold that the two conditions advance together and claim a common ætiological factor. Nevertheless it is the lot of every rhinologist to come across a large number of cases in which the removal of sinus disease results in an amelioration of the asthmatical symptoms or their complete cessation. My own experience has been that relatively few of these patients have a nasal suppuration without polypoid degeneration of the mucosa. The "hay fever-asthma" type of nasal mucous membrane is pale, watery and swollen and tends to become polypoid. However, the absence of polypi or the typical appearance above mentioned should not be taken to mean that no nasal sinus suppuration exists. One patient with the worst form of asthma I have seen had a pansinusitis with no sign of polypi in the nose at the time of operation. Any slight return of nasal trouble after operation brings an attack of asthma and the removal of a few polypoid buds or re-establishment of drainage brings complete relief once more. Insomnia is frequently a prominent symptom.

[1] Read at a meeting of the South Australian Branch of the British Medical Association on November 27, 1924.

Turning to the second group of symptoms, those in the digestive tract, we find a large number of patients with nasal sinus suppuration exhibiting symptoms of a chronic gastritis. Nausea and vomiting are frequently troublesome and arise from irritation of the gastric membranes by pus which is swallowed, or by the constant hawking and attempts to clear the secretions from the pharynx and naso-pharynx. Loss of appetite and the unpleasant taste and smell of food are prominent factors in the production of wasting and weakness. As the consequence of these and other factors in sinusitis, the patient's complexion assumes the yellow or muddy hue generally associated with toxæmia.

In the third group symptoms referable to the visual apparatus may be mentioned, though the general practitioner is rarely called upon to treat these. They may take the form of pain and of œdema around the eye, as in acute frontal sinusitis, orbital cellulitis from extension from the ethmoidal cells or pain and tenderness over the infra-orbital ridge in antral affections. Symptoms of optic neuritis with consequent loss of vision, central scotoma and so forth are recognized in some cases as being brought about by a direct extension of the inflammatory process from the sphenoidal sinus or posterior ethmoidal cells. Chronic lid trouble and dacryo-cystitis may be occasionally traced to a suppurative focus in the nasal sinuses. Disorders of accommodation or photophobia are sometimes seen in these patients.

Fourthly affections of the auditory apparatus frequently owe their origin to suppuration in the nasal sinuses. The infection spreads from the naso-pharynx up the Eustachian tube to the middle ear, the result being a suppurative otitis. The combination of these two affections is relatively frequent and should not be overlooked. Owing to the constant re-infection of the ear by the nasal pus mastoiditis often developes at some time or another in the course of the disease. Operation on these patients would be obviously incomplete without attending to the offending sinus. An intractable tinnitus without any local signs in the ear is also by no means rare in association with nasal sinusitis.

Lastly we have to consider a large group of general symptoms referable to toxæmia or retention of pus. Headache is probably the most important of these. It may be general or localized over the affected sinus. Local headaches usually exhibit a periodicity which is useful in diagnosis. Symptoms such as mental dulness, lack of concentration, irritability or depression are the rule. Vertigo is frequently complained of, especially in the stooping posture. In chronic affections physical weakness and loss of weight are often noted and many patients volunteer the statement that they awake in the morning with a nasty taste in the mouth and feeling as if they had not slept at all. Insomnia is frequent, but the foregoing remarks apply equally to those who sleep the night through. Sufferers from chronic nasal sinusitis frequently exhibit an extreme degree of nervousness and show a great improvement in this respect if the disease be successfully treated. I do not suggest that all nervous individuals should have their noses examined, but I have frequently seen patients who would hardly tolerate the presence of a speculum in the nose during a first examination, change remarkably for the better as their sinusitis cleared up.

In conclusion let me say that unless the physician makes specific inquiries, the patient is not likely to mention troubles in the upper air passages. Also remember that probably two out of three will reply to a leading question that they have a "touch of catarrh," a condition which is regarded by them as a thing of small importance and is apt to be accepted by a physician at the patient's valuation. This, I think, is due to the fact that the term "catarrh" has come to be applied by the laity (assisted by advertisements in the daily press) to many diverse conditions, varying from the practically normal to the grossly pathological. However, the passing mention of this "touch of catarrh" should always be followed up, as it may be a real aid to the physician, whilst for the patient it may prove to be the starting point on the road to permanent cure.

THE DANGER SIGNALS IN GLAUCOMA.[1]

By E. A. MATISON, M.D.,
Adelaide.

I HAVE chosen "The Danger Signals in Glaucoma" as the subject of my paper before you, believing it will stimulate useful discussion on an important matter. It is a disease that is not only common, but is most destructive. It is common, for it constitutes 1% of all eye diseases. Also it is destructive, for before the introduction of modern methods of treatment it was responsible for more blindness than any other eye disease.

Historical.

Before dealing with the signs and symptoms of glaucoma, a reference to the history of the disease may prove of interest. Glaucoma was known to the ancients who gave it its present name, but little progress had been made in its study till 1830, when MacKenzie drew attention to the hardness of the glaucomatous eye. He advised paracentesis of the aqueous or viterous chamber to reduce the intra-ocular pressure. Also about this time von Graefe discovered the therapeutic value of iridectomy for glaucoma. In 1851 Helmholtz gave the world the ophthalmoscope and this led to Weber's discovery of the cupped disc in the glaucomatous eye.

In 1876 Lacgent, of Strasburg, introduced miotics in the treatment of glaucoma. Lagrange in 1906 discovered sclerectomy and it was this that led on to Elliot's trephine operation, which is practised in all parts of the civilized world today.

[1] Read at a meeting of the South Australian Branch of the British Medical Association on November 27, 1924.

Elliot's operation was a most brilliant discovery. The labours of these illustrious men have given us our present knowledge of the disease and have enabled us to save thousands from the tragedy of a sightless existence.

One is often told by medical men that they have never seen a case of glaucoma and that it is so rare that they are justified in ignoring it. This is a fallacy, for at least one patient with glaucoma presents himself to the general practitioner every few years.

The patient with glaucoma usually reaches the oculist in a fairly well advanced stage, often not before the loss of one eye. Any treatment in glaucoma to be successful must be instituted early in the disease and this is only possible if the early signs are carefully observed. These, it is true, are vague in many cases, but can be found if looked for. The text-book definition of glaucoma as an eye disease characterized by increased intra-ocular tension, cupping of the optic nerve head and ultimate blindness if untreated, is not helpful in obtaining our *desideratum* of a diagnosis before the hypertension becomes continuous. This definition leaves out the important point that the above symptoms are preceded in most cases by some very important, though vague symptoms and signs which cover longer or shorter periods of time. The ideal method is to diagnose glaucoma during this initial period. To await the development of positive signs in accordance with the text-book definition, would correspond to a diagnosis of typhoid fever by an enlarged spleen or a Widal reaction, in other words when the disease is already well advanced. The careful clinician will base his diagnosis on the early, though not so definite, signs. To obtain this in glaucoma is my aim in this paper.

Symptoms and Signs.

Now what are these early symptoms of glaucoma? There will be such vague symptoms as occasional flashes of light (rainbows around lights), misty vision, spots before the eyes, pain in and around the eyes and slight attacks of congestion of the eyeball. These are what the patient suffering from glaucoma in the early stages will present.

In many cases these mild symptoms may last for several years, only to be precipitated into an acute attack by physical fatigue, over-indulgence in food or some other nervous strain. Some books describe acute glaucoma as a definite entity; this is denied by the leading authorities on the subject. Acute glaucoma *per se* does not exist; it invariably represents only a phase, in some cases of quite an accidental nature, of the self-same disease. In other words the disease will at times gradually and imperceptibly enter the very advanced stage, while at other times for some unexplained reason an acute and stormy phase will be reached, which is described by some books as acute glaucoma. The relation between acute and chronic glaucoma is aptly compared by Elliot to that between a strangulated hernia and a non-strangulated one.

The early attacks of glaucoma, if mild, will rarely be seen by the medical men, for these are transient, lasting only an hour or so with a variable interval before another attack. When seen in one of these quiescent intervals the eye will be found nearly normal in external appearance. The central vision is normal or even more than $^{6}/_{6}$. However, a careful study of the peripheral vision will often reveal a slight constriction of the nasal half of the field. If the patient is seen during an attack, the objective examination will reveal swelling and œdema of the lids, but this may be entirely absent in a mild attack. The cornea is dull and clouded, resembling frosted glass and decidedly less sensitive than normal when touched with a few shreds of cotton wool. The anterior chamber is shallow due to a forward advancement of the iris by the back pressure of the aqueous. The pupil is more dilated than usual, slightly oval in shape with the long axis horizontal and it reacts only sluggishly to light.

This briefly describes one of the phases of glaucoma commonly known as acute or congestive glaucoma and the symptoms and signs just enumerated will be present to a greater or lesser degree according to the severity of the attack.

We will now turn our attention to the more usual type of the disease, to the eye that has not had the misfortune to pass through a "vascular storm," but has gradually and imperceptibly become involved in the chronic or simple type of disease. *Glaucoma simplex* in pathological characteristics is identical with the congestive type, but it steers the poor sufferer slowly but none the less surely into the sea of darkness. In *glaucoma simplex* there are none of the external manifestations described above under the signs of the congestive type. Objectively the eye may be quite normal; central vision will be found to have suffered comparatively little even up to an advanced stage of the disease. To diagnose this insidious malady early will require a careful study of the peripheral vision and repeated examinations of the tension. An occasional palpation with one's fingers may be misleading, for even in an eye with well advanced glaucoma the tension fluctuates considerably from day to day even at different times on the same day; it is highest between 10 a.m. and 11 a.m. and lowest between 3 p.m. and 5 p.m.. This fluctuation of tension in *glaucoma simplex* is referred to as the "tension tide."

The tension of the eye may be estimated by the fingers, but the tonometer enables it to be measured with far greater precision. The tonometer consists of a cylinder at the lower end of which is a concave plate. This is applied to the cornea after this has been made insensitive by 2% "Holocaine." Through the cylinder there is a small sliding rod which carries a weight. The amount of dimpling produced by the sliding rod is recorded on this scale. This reading is translated in terms of millimetres of mercury from a chart supplied by the manufacturers of this instrument. In eyes either suffering from or predisposed to glaucoma the instillation of a drop of eserine lowers the intra-ocular tension,

while a drop of homatrophine raises it. This does not occur in normal eyes and is a fact of some use in cases of doubtful diagnosis. However, before the instillation of homatropine or euphthalmin for diagnostic purposes, proper precautions must be taken immediately to counteract the dilatation of the pupil.

An important early sign which may lead to the discovery of a glaucomatous predisposition is an early and rapidly progressive presbyopia. The refraction of a patient's eye may be carefully tested and he may be supplied with a satisfactory correction for reading and it is found that in a few months this is too weak and a stronger lens is required out of all proportion to the time elapsed. This results from the pressure on the ciliary muscle gradually weakening the accommodation.

Finally, I will refer to the last sign to appear in glaucoma, cupping of the optic nerve head. The *lamina cribrosa*, being the weakest spot of all the tunics of the eye, is naturally the first to yield to the abnormal pressure. However, to delay the diagnosis of glaucoma till there is cupping of the disc would correspond to a diagnosis of typhoid fever when a hæmorrhage or a perforation makes its appearance.

To conclude, I would suggest that in approaching all cases of eye diseases, one should bear in mind the possibility of glaucoma, because only in this way will the early and obscure cases be detected.

THE USE AND ABUSE OF THE UTERINE CURETTE.[1]

By FOURNESS BARRINGTON, M.S. (Edin.), F.R.C.S. (Eng.).
Sydney.

CURETTING of the uterus has a definite field in gynæcological practice, but the ring of limitation around it has been steadily narrowing. This narrowing is largely due to a better understanding of pelvic pathology, for all good gynæcology is based on pathology, the basis of our knowledge.

The operation of curetting the uterus consists in removing the mucous membrane lining the body of that organ. Such a procedure pre-supposes that the lining is diseased. The corporeal endometrium is planted snugly on the muscularis, there being no sub-mucosa. It is the softest mucous membrane in the body, succulent and thick. These facts explain why we can easily remove the whole mucosa of the body of the uterus in strips by the curette.

The Use of the Curette.

We must have definite indications to justify the operation of curetting. We may crystallize the indications under two headings.

Diagnostic.

The curettage may be undertaken to obtain scrapings to explain the cause of undue hæmorrhage. The microscope differentiates between chronic endometritis, retained gestational products and malignant disease. It may be taken as a clear axiom that any woman who bleeds after the menopause or has intermenstrual bleeding before it with a healthy cervix, ought to be curetted and the scrapings examined microscopically. Great care must be taken in curetting the uterus in which carcinoma of the body is suspected, especially in senile women, for in such the wall may be very thin and soft.

The broad fact remains that the curette is mainly a diagnostic instrument and its use is often essential to an accurate diagnosis. The instrument may be regarded as an elongated finger and when possible the trained finger should be used in its stead.

Therapeutic.

The curette may be employed therapeutically in hæmorrhage due to retained secundines and chronic endometritis. Curettage may be performed with propriety in all forms of chronic endometritis manifesting itself by undue hæmorrhage, hypertrophic, hyperplastic, decidual, fungous, polypoid or senile endometritis. Hæmorrhagic endometritis gives the very clear cut curative indication. A definite diagnosis of endometritis can only be made by the finding of the characteristic microscopical changes in the uterine scrapings.

Occasionally the operation can be carried out in cases of sterility on the ground that regenerated mucosa is more liable to accommodate an ovum.

We see the indications are strictly limited. On these indications the results are satisfactory. From a curative standpoint the benefit of curetting is proportional to the amount of tissue removed, provided that tissue is not malignant.

Abuse of the Curette.

The abuses are manifold. The major abuses will be referred to as pitfalls from the use of the curette.

Spreading Infection in Cervical Gonorrhœa.

The danger of cervical gonorrhœa is largely due to the power of the gonococci to penetrate the columnar epithelium of the endo-cervix. Once beneath the surface, the tissues afford them nourishment and protection. They thrive amongst the folds of the mucosa and the compound tubular glands which open into the endo-cervix. The endo-cervix is the gonococcal storehouse. From this storehouse come the organisms which may keep her infectious for years. Any interference with Nature's bacteriological gate, the internal *os*, by sound, dilator or curette spreads the infection and causes pelvic inflammation.

One of the greatest pitfalls of gynæcology of today is the indiscriminate use of the curette in the attempted cure of chronic leucorrhœa. Many of these patients suffer from chronic endo-cervicitis due to gonococcal infection. Curetting spreads the infection above the internal *os* to the endometrium and the Fallopian tubes.

In this way, by the passage of the sound, dilator or curette, a gonococcal infection limited to the endo-cervix spreads rapidly upwards and forms the

[1] Being the inaugural address by the President of the Section of Obstetrics and Gynæcology of the New South Wales Branch of the British Medical Association as an opening to a discussion on August 6, 1924.

acute inflammatory pelvic mass. I saw three patients in my consulting room in one week with lesions illustrating this disaster.

When thick, tenacious muco-pus is seen issuing from the cervix, it is inadvisable to pass a sound above the internal *os* or to use a curette. The chronically infected mucosa of the cervix cannot be removed by the curette. Curetting will never cure and has never cured a chronic gonococcal endocervicitis; the infection is deep down in the compound tubular glands.

Spreading Infection in Post Partum Sepsis.

The indiscriminate use of the sharp curette is most harmful in *post partum* sepsis, be it after abortion or labour.

In removing septic matter from the uterus, the curette must plough up the ground and scatter afresh the seeds of sepsis. It must open up many lymphatics and veins to fresh infection. It must interfere with Nature's bank of leucocytes. It may cause an infection limited to the interior of the uterus to spread to all parts of the pelvis or to become generalized.

If anything is left behind, the best and safest way to remove it is by the gloved finger or fingers. If the uterus is empty, leave it alone; there is no need to interfere.

Reserve the curette for the exceptional cases in which retained products are so adherent that they cannot be removed by the fingers. Then use a gentle raking movement only over the adherent area. The best curette is the Royal Prince Alfred Hospital pattern, blunt and rather large. In obstetric practice, the finger is to be preferred; the less the curette is used, the better.

Many cases of acute pelvic disease with an inflammatory mass after abortion or labour are caused by the curette. Its abuse has greatly increased the mortality and morbidity of *post partum* sepsis. In a large number of patients admitted to the general hospitals, Nature's beneficent processes have been disturbed by this meddlesome curetting.

There is no doubt about this, too: the less the uterus is interfered with in the severe types of infection, the better for the patient.

Lighting up Quiescent Infection, such as a Long Dormant Salpingitis.

The curette kindles afresh the smouldering fire. A large, acute inflammatory pelvic mass results. Be very careful about curetting a woman with one child fertility. The cause of it may be an old slumbering infective salpingitis which has blocked her tubes and sterilized her. Curetting, instead of rewarding her with the promised baby, may give her a long, trying illness which will be difficult to explain satisfactorily. Curetting should never be performed in the presence of diseased or adherent appendages, unless it is to be followed immediately by abdominal section.

Repeated Use of the Curette Failing to Arrest Hæmorrhage as in Chronic Subinvolution . (Fibrosis Uteri).

We know the pathology of chronic subinvolution. There is great excess of elastic tissue around the blood vessels. This acts as a mechanical obstacle to the proper retraction and contraction of the uterine muscle which normally stops menstrual bleeding.

Failure of the curette to lessen the bleeding is an important diagnostic point. If the curette comes down on firm tissue and no endometrium is removed, no benefit follows. Repetition of the operation must be a failure. Remember the benefit of curetting is proportional to the amount of tissue brought away.

Curetting will never cure the intractable hæmorrhage of chronic subinvolution. One surgical procedure will do it and one alone, supra-vaginal hysterectomy.

Uterine Trauma, Perforation of the Uterus in Incomplete or Inevitable Abortion.

We have had many patients in hospital and private practice with uterine trauma, caused by the curette, perforation of the fundus, of the right cornu, of the left cornu, of the anterior wall above the bladder, of the posterior wall above the cervix. Why do they occur? There are two reasons. The first is because the curette is used instead of the safer finger. Use the gloved hand to clear out an abortion whenever possible; it is safer than any curette. Sometimes the cervix must be dilated to admit the finger. Use conical dilators, graduated, keeping the left hand on the fundus all the time. After efficient dilatation, pass the forefinger of the right hand into the uterine cavity. With the left hand depress the fundus into the pelvis. Separate the uterine contents from below upwards with the finger. The gloved finger is the best instrument to use in separating an abortion. Avoid instruments; they may be passed through the soft uterine wall.

If there is adherent decidua which cannot be removed with the finger, use a curette gently and rake it away. The one already shown is the best for the purpose.

The second reason is that when the curette is used, the left hand performs a wrong function. Always use the right hand for the curette. Always use the left hand to guard the fundus carefully.

The nurse or assistant should hold the volsellum and speculum. The cause of this disastrous pitfall is holding the volsellum with the left hand and the curette goes through the unguarded uterine wall. Prevent it by guarding the fundus always with the left hand. This enables the end of the curette to be located.

Curettage in Unrecognized Tubal Gestation.

Another pitfall from the use of the curette arises from curetting the uterus for supposed uterine abortion when tubal gestation is present.

Remember the golden rule. When the patient is under the anæsthetic always make a careful bimanual examination before curetting the uterus. Therefore, never treat a supposed case of uterine abortion without first making a careful bimanual to exclude a possible tubal gestation. The expulsion of decidua with bleeding which occurs in tubal gestation may be mistaken for an early

uterine abortion. If this is treated by curetting, it might lead to serious results, even death from rupture of the gravid tube. This has happened many times.

If, therefore, a mass is felt outside the uterus and the cervix is undilated, abandon the diagnosis of uterine abortion and leave the uterus alone, unless it is intended to open the abdomen at once.

There are some further abuses of the curette to which reference may be made.

In menorrhagia incident to retro-displacement it is not an uncommon practice for the uterus to be curetted without any effort to rectify the provoking cause, the malposition. The relief, if any, can only be temporary.

In the menorrhagia of uterine fibro-myomata it is a dangerous procedure. It rarely does good and may cause infection of the tumour. To this broad statement this proviso may be made: curetting should always be done in cases associated with menorrhagia when myomectomy is contemplated. If there is hyperplastic endometritis present, the menorrhagia will not cease after myomectomy, unless the uterus is curetted in the ordinary manner or through a hysterectomy wound.

In uterine hæmorrhage from cardio-vascular, renal, endocrinous lesions or other conditions outside the uterus, the curette is too often employed in place of a careful study of the ætiology.

Curetting every patient after abortion as a routine practice, is another abuse. An inevitable abortion usually proceeds naturally as a miniature labour and ends spontaneously. There are definite indications for interference—excessive hæmorrhage, pyrexia and inability of the uterus to expel its contents (incomplete abortion). When interference is required the best course to follow is to empty the uterus with the finger.

Curetting is at times carried out for pelvic pain in neurasthenics with no menorrhagia and no discoverable pathological condition in the pelvis on the snap diagnosis of endometritis and on the ground that curetting is easy and cannot possibly do harm.

This presumption is grossly untrue. The operation may be difficult and its alleged safety is a dangerous delusion.

It is with a sense of great loyalty to the profession and at the same time a feeling of humiliation that the general statement is made, there is still too much futile curetting based on insufficient indications and a want of knowledge of pelvic pathology.

LATENT SYPHILIS.

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THE following observations relating to syphilitic infection, with no symptoms or signs such as are commonly ascribed to syphilis, may be of interest.

During 1924 the Wassermann test was carried out as a routine on the blood of all patients admitted to the Neurological Section at the Prince of Wales Hospital, Randwick. The patients were all males between the ages of twenty-six and fifty-four. Three hundred and twenty-five men were examined in this way and a positive result for syphilis was reported in thirty-one. The Wassermann tests were carried out under the supervision of Dr. A. H. Tebbut and the blood of every patient yielding a positive result was re-examined. The thirty-one patients alluded to above are those in whom at least two positive results were obtained.

No definite syphilitic patients were included in the above number and none of the patients were suffering with common syphilitic sequelæ such as aneurysm, aortic disease, tabes and so forth.

The disabilities of these thirty-one patients were as follow and except where stated no organic disease was detected:

1. Weakness, pallor, loss of weight.
2. Gun-shot wound of the leg, insomnia and exhaustion.
3. Irritability, instability, grandiose ideas, no reaction obtained when the Wassermann test was applied to the cerebro-spinal fluid.
4. Aphonia, failure to detect an organic lesion of the larynx.
5. Tremor, pallor, weakness, loss of weight.
6. Gun-shot wound of the leg, pains in amputation stump, chorioiditis, sluggish pupils, loss of weight.
7. Weakness, insomnia, depression, mental instability.
8. Weakness, tremor, pallor, loss of weight.
9. No evident disability.
10. Weakness, loss of weight, palpable glands of the neck.
11. Tremor, writer's cramp, alcoholism, Wassermann reaction with the cerebro-spinal fluid.
12. Lack of concentration, grandiose manner, no reaction to the Wassermann test with the cerebro-spinal fluid.
13. Sudden loss of memory, fever, mental dulness very suggestive of cerebral syphilis, Wassermann reaction with the cerebro-spinal fluid.
14. Mental depression and hebetude, weakness.
15. Gun-shot wound of the neck and fractured spine united in good position; no other symptoms.
16. Tremor, alcoholism, no reaction in the cerebro-spinal fluid to the Wassermann test.
17. Depression, mental instability, pallor, chronic nephritis.
18. Pleurisy, loss of weight.
19. Potts's disease of the spine.
20. Depression, lack of concentration, lachrymose.
21. Chorioiditis, *petit mal* (?), no reaction to the Wassermann test in the cerebro-spinal fluid.
22. Depression, lachrymose, childish, suicide.
23. Epileptiform convulsions.
24. Weakness, depression, lack of concentration.
25. Palpitation and weakness, effort syndrome.
26. Insomnia, weakness, tremor and exhaustion.
27. Hoarseness, weakness, vocal cords inflamed.
28. Alcoholism.
29. Loss of weight, pains in the back, headaches.
30. Nervousness, insomnia, weakness.
31. Tremor, loss of concentration, alcoholism.

The degree of reaction in these tests was noted thus: Three were said to be "positive" only; three were "weakly positive," but definite; one was "+," three were "++" and twenty-one were "+++" (full positive).

It will be seen that in the majority the symptoms were not such as to suggest syphilis; as a matter of fact syphilis was suspected from the history and clinical examination in only six patients of this series. One of these suffered from enlarged glands

of the neck, two from chorioiditis, two from cerebral syphilis and one was suspected to be suffering from general paralysis of the insane. The latter patient manifested no signs of syphilis and his cerebro-spinal fluid did not react to the Wassermann test. There were thus twenty-five patients in whom syphilis was not suspected on clinical grounds, that is to say there was no history of infection, rash, glands, hair falling, miscarriages and so forth and no signs of syphilis. Two of these twenty-five patients admitted gonorrhœal infection six to ten years before and two stated (after the Wassermann test had yielded a reaction) that they had had injections, presumably for syphilis, but there were no clinical signs of syphilis to be observed. This aspect has been noted especially because the majority of the patients were admitted with nervous symptoms and a diagnosis of hysteria or neurasthenia and, when told that there was evidence of syphilis in their blood, they worried themselves and their doctor in an endeavour to find any precedent symptoms or signs of the disease. In the absence of these they were inclined to think that they were not suffering from syphilis. Careful inquiry was made in all cases and only one definite instance was found in which the wife was obviously infected and showed signs of syphilis (gumma of the forehead). Only sixteen of these patients were married, however, and in four of these no history of the wife's recent health could be obtained. Similarly a history of syphilitic symptoms or signs in the children was obtained only in two cases. These facts about the wives and children are not founded on a personal examination, but most of the men were anxious to ascertain whether their wives and children had any signs and probably gave a fairly true history. The serological examination of the wives and children of these patients could not, however, be carried out at Randwick, so that we did not know in how many the Wassermann test for syphilis yielded a positive result. It would appear from the histories that definite syphilitic lesions were rare in the wives and children.

We must assume, from Fairley's results, that these men were suffering from latent syphilis. On examining the histories it was noted that there were only two signs which recurred at all frequently, pallor and loss of weight. The latter has been such a common sign among hundreds of returned soldiers who have not reacted to the Wassermann test, that it cannot be regarded alone as furnishing any evidence of syphilitic infection; pallor on the other hand, if unexplained, would generally lead to the performance of a Wassermann test. It was noted, however, that no improvement followed the administration of anti-specific remedies, either in regard to colour or other symptoms, except in those patients in whom there was clinical evidence of syphilis and in those improvement was noted only in two out of the five patients. The twenty-six patients who had no signs of syphilis, apparently suffered from latent syphilis; this number represents 8% of the total in this series. These figures confirm those of Fairley and Fowler[1] who found by the Wassermann test 10% syphilitics in three hundred and eighty obstetric patients. They also showed that the proportion of positive results in children and husbands of women with Wassermann reactions, was very high.

The Wassermann test is now fairly generally regarded as a satisfactory test for syphilis, but the clinician will not infrequently be tempted to disagree with a positive result when he can find no history or clinical evidence of syphilis and when the patient's arguments are constantly directed towards trying to prove that he has not got syphilis. In view of the evidence adduced by Fairley,[2] Craig,[3] Turnbull[4] and others it must be accepted that a consistent Wassermann reaction means syphilis; at any rate so far as the treatment of the subject and the examination of every avenue for signs of the disease, are concerned. Even so late as 1923, however, Dreyer[5] and others found five out of one hundred and sixty-nine patients examined, in whom clinically a diagnosis of syphilis could be excluded, to yield Wassermann reactions, which they called "false positives." In these persons the "sigma" reaction, which they considered more delicate, failed to yield reaction.

Baumgartner and Lindner[6] found only 3.7% among the middle classes (especially the professional classes) showing some degree of reaction to the Wassermann test.

It is curious that both Craig and Fairley found a much smaller proportion of reactions among patients suffering with other diseases than syphilis (Craig 0.3% and Fairley 0.4%). The reason for this is not clear. One would naturally expect that if a routine examination of unselected patients yielded 3.7% to 10% positive results, similar figures would be obtained in those suffering from other diseases. As regards symptoms other than pallor and loss of weight, tremor, weakness, exhaustion, lack of concentration and so forth, were more commonly symptoms of neurosis than of syphilis.

Lumbar puncture was performed ten times in these thirty-one patients and the cerebro-spinal fluid of two patients only gave a Wassermann reaction. One was definitely suffering from cerebral syphilis and the other had no signs of nervous syphilis. The other eight were those patients in whom involvement of the nervous system was suspected on clinical grounds, such as convulsions, grandiose ideas and so forth.

Summary.

Routine examination of the blood by the Wassermann test was carried out on three hundred and twenty-five consecutive patients.

A positive result for syphilis was reported in thirty-one patients. Twenty-six of these gave no history and showed no signs of syphilis. They were suffering from latent syphilis.

The symptoms and signs observed were not those usually attributed to syphilis.

Except in the definitely syphilitic (clinically) patients, no obvious improvement followed anti-syphilitic treatment.

The cerebro-spinal fluid gave a positive result in two out of ten persons.

In view of the apparent frequency of latent syphilis it may be that the beneficial effects of potassium iodide in some obscure cases in the past finds here its explanation.

Acknowledgement.

I wish to thank Dr. V. Benjafield for permission to publish these notes.

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Reports of Cases.

BULLET WOUND INJURY TO VISUAL CORTEX ON EACH SIDE.[1]

By J. LOCKHART GIBSON, M.D. (Edinburgh), M.R.C.S. (England),
Brisbane.

P.J. lives at a distance and is only in town for one day. I am showing him because his case should be at least as interesting to physicians as to ophthalmologists.

When seen by me first in 1918 he was only twenty-three years of age. He was wounded at Beersheba. The bullet entered on the left posterior segment of the vertex through the posterior part of the parietal bone. It passed downwards and to the right and came out of the skull cavity to the right of the mid-line at about the occipital suture. The case is one of right bilateral homonymous hemianopsia, with severe injury to, almost total destruction of the primary visual cortex on the mesial aspect of the left occipital lobe, involving the calcarine fissure and cuneus specially and with some injury also to the visual cortex of the right occipital lobe.

His fundi are normal. He can find his way about well, but does not know what most of the objects are that he avoids, or recognizes them very imperfectly. The images formed on each retina are no doubt perfect and the messages from the retina are carried to the visual cortex, but they are not received by the practically destroyed left primary visual cortex and are imperfectly recognized by the injured right primary visual cortex. He is word-blind, letter-blind and partly object-blind. The right visual cortex in right-handed people does not recognize word pictures and perhaps not letter pictures, but it apparently recognizes objects as such except when injured as in this man.

He can by the aid of his eyes pick up comparatively small objects from the floor, but does not know what they are until he feels them. He does not know his own wife if he meets her in the street, nor can he tell whether a person is a man or a woman by sight. Had each visual cortex been entirely destroyed, he would be blind, as another returned man I showed at the Brisbane Congress is. The bullet went straight through both occipital lobes in his case.

In this evening's patient there has not been absolute destruction of either primary visual cortex, because he can trace light imperfectly even in his right fields and well in his left fields. I have not taken them exactly.

When I saw him first in 1918 he was still able to recognize large letters: Jaeger 19, but quite unable to recognize word-pictures even of two letters. His form sense was then less defective than now and the lower right quadrant of his visual field was more completely absent than the upper right quadrant.

During the last three months he has had several attacks of complete blindness lasting on some occasions from one morning until he awakes on the next morning. Whether these attacks are merely replacing epileptic attacks from which he, since wounded, had previously suffered, or indications that the mesial cortex of the right occipital is beginning to suffer more, it is difficult to say. I think in a young man such as this patient, unless the mesial cortex of the right occipital lobe had also suffered injury, it is likely that its cortex would have been educated to take on some of the work of the mesial cortex of the left occipital lobe.

[1] Read at a meeting of the Queensland Branch of the British Medical Association on November 7, 1924.

A CASE OF ACUTE PRIMARY TUBERCULOSIS OF THE TONSIL.

By A. E. BROWN, M.B., Ch.B. (Cambridge),
AND
K. McK. DOIG, M.B., Ch.B. (Melbourne),
Colac, Victoria.

ACUTE primary tuberculosis of the tonsil is a very uncommon disease and many of the reported cases are open to the criticism that there is not sufficient evidence that the trouble in the tonsil is primary. In the case we report now, we are not in a position to deny that there may have been some latent focus of tuberculosis present in the body, but the acute attack of illness that brought about death in an apparently healthy man, was undoubtedly primary in the throat. Phillips in his work on nose and throat, describes the clinical appearances of such conditions and states that when tuberculosis occurs in an acute form in the naso-pharynx, the tonsil is the main seat of the disease in the majority of instances.

The patient, R.A., male, single, aged twenty-nine years, was in ordinary good health until three weeks before he was seen for the first time in this illness. He insured his life for a small sum in December, 1923, and in his statement at that time said that he had had no medical advice or treatment for the previous five years and we got no indication of previous illnesses in taking his history. His mother is alive and well. His father died at the age of forty from a pulmonary trouble. The mother said that it was a lung complication in typhoid fever. The insurance statement was that it was miner's phthisis. Four other children died in infancy, one of bronchitis, one of pneumonia and the others of undetermined causes. He was first seen on October 1, 1924, with a history of sore throat for three weeks. The right tonsil was reddened and swollen and covered with a yellowish membrane spreading up on to the uvula. Swabbings were taken and examined for the organism associated with diphtheria and Vincent's angina, but none was found.

On admission to the hospital on October 3, 1924, the condition was unchanged inside the throat, except that the membranous appearance on the tonsil was whiter and had more the look of superficial ulceration. The glands on the right side of the neck were enlarging. A Wassermann test was done and no reaction obtained, and in the interval of waiting for the report on it he was given iodide of potassium and mercury. The glands on the left side followed those on the right in enlarging during the next few days, the right side ones steadily increasing in size during that time.

On October 15, 1924, there was definite fluctuation in the glands on both sides. The tonsil and faucial region were swollen considerably, but without much œdema. Pus was aspirated from both gland abscesses and examined. The abscesses were both incised. Thirty cubic centimetres or so of thick pus came from the right side and about four cubic centimetres of thinner pus from the left. Hard enlarged glands were felt in the abscess cavities with the finger on both sides.

The pus was inoculated on to agar, blood agar and serum; plates, slopes and stabs were used, but there was no growth in any case. Examination of smears by Gram's stain revealed no organisms other than large numbers of thin Gram-positive rods, strongly beaded. Ziehl-Nielssen's stain showed these rods to be acid fast and to have the characteristics of tubercle bacilli.

The patient went rapidly downhill. The temperature varied between 38.4° C. and 39.4° C. (101° F. and 103° F.). Respiration increased to forty per minute. He became cyanosed and his voice became husky, indicating an extension of the disease to the respiratory passages. His mental state became clouded and hazy. Death occurred on October 25, 1924, just about six weeks from the onset of the trouble.

A full *post mortem* examination could not be made, but the throat was examined after death. The peritonsillar space was converted into an abscess cavity containing thirty cubic centimetres or more of pus. The remains of the tonsil and ulcerated soft palate with the uvula, were removed and sections made of them. These contained typical giant cell systems and multitudes of tubercle bacilli in the tissues.

Reviews.

HISTORY OF THE GREAT WAR.

WITH the publication of Volumes III. and IV. of the "General History of the Medical Services" in the Great War the series is complete. The volume dealing with statistics which would probably have been so valuable for reference in the event of planning for any future war, was unfortunately abandoned. It is understood that this was done because the time limit laid down for the preparation of this history was reached before the statistics were compiled. The conditions of time and finance under which the history of the medical services was written, is explained in a recent number of *The Journal of the Royal Army Medical Corps* and it is a matter for very great regret that insufficient time and space were allowed for a full and considered history of the different campaigns. No equivalent limitations are apparently placed on the "History of the American Medical Services," still in course of preparation. The effect of this writing against time is shown particularly in the volumes on general history. The campaigns or parts of them are treated very unequally; some present a clear picture of the general arrangements, others are confusing and dull and appear to be little more than catalogues of the medical units engaged and their movements. As a result the general chapters are the more readable and informative; even for the student of military medical history the accounts of many battles and campaigns are too sketchy to give a clear picture of the medical arrangements. There has apparently been insufficient time to present an appreciation of the medical situation, using the word appreciation in its military sense, of many of the battles described. The plan of describing the hygiene of the War separately from the accounts of the general medical arrangements of campaigns, though excellent in principle, has had the effect of eliminating the dominant features of the picture drawn of the medical situation in some campaigns, notably that in Gallipoli where sanitation (or the want of it) played so great a part or the Sinai desert campaign where water supply was the dominant factor. Notwithstanding these minor failings, no medical history has ever been written that can compare with the one under review for the information it contains.

The wide field of operations covered by the British Army furnished examples of almost every kind of problem that may have to be faced by the medical services of an army. On the Western Front were the unparalleled battle casualties of large armies on a small front and the pathology of trench warfare. In Macedonia, East Africa and Palestine the more murderous malaria was encountered, as well as Arctic cold in North Russia, intense heat in Mesopotamia, sea evacuation from Gallipoli, bush fighting in West Africa and desert campaigns in Egypt. One great general lesson arises from the consideration of these widely different campaigns—the necessity of full consideration and preparation for the medical aspect of a campaign before it is launched. Where this has not been carried out the results have been unnecessary human loss and hardship and great expenditure of treasure. Such lack of preparation is but a matter of history repeating itself, as in the ill-fated Walcheren expedition and the Crimea. But it is a striking fact that in the Great War wherever initial errors of omission were committed, a resolute handling of the situation in all cases caused the difficulties to be overcome and the campaign, with the exception of Gallipoli, brought to a successful conclusion. Though faulty medical administration has, as Sir William Macpherson mentions, been largely responsible for some of the breakdowns, yet another lesson appears which cannot be too often emphasized. That is the necessity for a close *liaison* between the General Staff and the medical administration. Where this was absent some of the worst breakdowns followed.

Volume III.[1] deals with the campaign of the Western Front from the beginning of 1916, Italy, Egypt and Palestine. The most notable chapters concerning the western front are those on the Battle of the Somme, the German offensive and the advance to victory. The Battle of the Somme lasted nearly five months and during this time 316,000 wounded were admitted by the ambulances of the three armies engaged. It furnishes the classical example of the medical arrangements found most suitable for the evacuation of large numbers of casualties from a narrow front. Greatest attention is given, as throughout the history, to the strategical disposition of casualty clearing stations and medical units in rear of them. One casualty clearing station admitted as many at 5,350 patients in twenty-four hours. Valuable data are given as to the number of ambulance trains required for fighting of this nature. It was in this battle that the plan of forming one main dressing station in each corps was instituted and with success. It is noted that seventy-four medical officers were killed during the fighting.

In the account of the Battle of Arras particular mention is made of the incident in which a number of wounded from the Cavalry Corps were left at Monchy owing to the lack of *liaison* between the General Staff and the Assistant Director of Medical Services of the Division. By the date of the Battle of Ypres in 1917 the organization of advanced operating units was in full swing, so that 30% of the wounded underwent early operation. The adventures of the casualty clearing stations during the German offensive of March, 1918, makes interesting reading, but the striking difference between medical dispositions for trench warfare and for the victorious advance at the end of 1918, with the confusion that arose, is not emphasized.

The outline of the general medical situation in Egypt in 1915 is meagre. It is known that there was a great lack of diaries for this period which must have made the collection of information exceedingly difficult. A clear account is given of the desert campaign west of the Nile, but this cannot be said of that of the Sinai and Palestine campaigns and it is most disappointing. It is sketchy and treated less fully than other campaigns of equal or less magnitude. It conveys the impression that the writer was not familiar with the topography of the country nor many of the more important medical details. Inaccuracies are numerous, especially in the account of the Battle of Romani and other operations up to the second Battle of Gaza. The description of the tactical use of mounted field ambulances is incorrect and sometimes the names of localities are wrongly spelt. The arrangement of the account of the operations in Palestine is not altogether satisfactory.

A description of the whole military part of the campaign extending over nearly two years is given before the medical arrangements are described, making it difficult to

[1] "History of the Great War Based on Official Documents—Medical Services: Medical History, in four volumes, by Major-General Sir W. G. Macpherson, K.C.M.G., C.B., LL.D.; Volume III.; 1924. London: His Majesty's Stationery Office; Demy 8vo., pp. 564, with sketch maps, charts, diagrams and illustrations. Price: Post free, 32s. net.

follow what really took place. There is an interesting account of the medical services in the final dash from the region of Jaffa to Aleppo, a distance of approximately five hundred miles. It is noteworthy, though not mentioned, that during this period the Director of the Medical Services of the Army was an officer of the Territorial Army, probably a unique appointment in the British Army.

Volume IV.[1] is the most readable and interesting of the series. The account of the epic struggle on Gallipoli, though not detailed, is very clear. It concerns itself largely with the medical arrangements for the landing and shows what confusion and utter lack of prevision existed regarding the whole medical situation for this great achievement, in contrast with the thorough preparations (which were not required) made for casualties at the evacuation.

The Macedonia campaign is also interesting from many points. The dominating factor, malaria, is brought well into the picture. The liberal supply of motor ambulance convoys, of which there were six for the needs of five divisions, is notably in contrast with Palestine, where one only was supplied for eleven divisions. The maps illustrating the medical situations are the clearest in the history.

A great deal of space is given to the Mesopotamian campaign, far more comparatively than to any other and it is one that well repays reading. The appalling lack of medical services at the beginning was unequalled in any other theatre of war. There was no wheeled transport for the field ambulances, no transport for wounded to the rear of the ambulances, no Assistant Director of Medical Services to arrange plans of evacuation, but in place of these there were impossible orders issued again and again by the commander of the force. There were no sanitary sections and no dentists and much of the modern equipment had not been asked for. It is almost incredible that such a state of affairs could have existed. The cause was apparently the dulling by years of strict economy in India of the initiative of those responsible for the arrangements. Economy, a virtue in peace, if carried out too far in war time, becomes a crime. It produces a habit of mind difficult to change at once and thus can lead to unfortunate results at the beginning of a war.

Generally there is more of the dramatic in this than any other campaign of the war. The medical situation is more thoroughly considered and the reader is less bewildered by the frequent mention of names of units. There is plenty of adverse criticism where it appears due.

In the operations for the relief of Kut el Amara the sufferings of the wounded from the lack of provision of medical services appear to have been at their worst; one instance is mentioned in which there were only three medical officers to attend to two thousand seriously wounded men.

Particularly interesting and well told without heroics is the description of the medical disabilities during the siege of Kut el Amara and the attempts to surmount them. Shortage of food, enemy fire and mental depression were the greatest drawbacks. It is noted that under the conditions of semi-starvation the healing of wounds was bad and that resistance to sepsis became very feeble. A great quantity of medical stores was provided by aeroplanes. In this country, as in others where cavalry made long marches before opening an engagement, it was found that the cavalry field ambulances without provision of transport for their personnel were of very limited value; apparently horses were not provided for the dismounted personnel as in Palestine.

Of an entirely different nature was the campaign in East Africa, but the same lack of forethought in the provision of medical requirements and the same failure to provide the chief medical officer of the force with essential information, is apparent. The most noticeable feature was the absence of the scientific and sanitary elements of the medical organization in a country where their need was so great. The nature of the country and its climate made the difficulties of evacuation of wounded and prevention of disease stupendous; the tsetse fly in some belts prevented the use of horses or mules; dense growth, marshes, wild animals and torrential rains were among the other obstacles. In none of the other theatres of war were the hardships of the sick and wounded greater. Malaria as in Macedonia, Palestine and Mesopotamia was the greatest cause of wastage. While battle casualities caused three thousand deaths, disease account for forty-eight thousand among troops and followers.

The medical aspects of the forces in Persia and Aden are briefly described, while the Arctic campaign in North Russia is dealt with more fully. The depression of spirits caused by the darkness, cold and silence of an Arctic winter is emphasized, while the provisions necessary to counteract the intense cold, striking a sharp contrast to all other campaigns, are very instructive.

A final chapter on all the contrivances and vehicles used for the carriage of wounded in the different theatres of war is a happy idea and may be expected to be most useful in the future as a source of reference.

The volume concludes with several appendices; one setting out the decorations won by the medical services of the British Empire is incomplete in so far as the Australian Army Medical Corps is concerned.

In conclusion it must be universally agreed that the whole medical history is an admirable production reflecting the greatest credit on the Editor-in-Chief who has carried out a truly stupendous task in an extraordinarily short space of time.

[1] History of the Great War Based on Official Documents: Medical Services—General History, in four volumes, by Major-General Sir W. G. Macpherson, K.C.M.G., C.B., LL.D., and Major T. J. Mitchell, D.S.O., Royal Army Medical Corps; Volume IV.; 1924. Edinburgh: His Majesty's Stationery Office. Demy 8vo., pp. 711, illustrated. Price: 25s. net.

NORMAL BONE SHADOWS.

WE have received for review the fourth of the series of monographic atlases forming part of the series of works edited by James T. Case known as the "Annals of Roentgenology." The present number, entitled "Normal Bones and Joints" is from the pen of Isodore Cohn.[1] The chief purpose of this work is to portray the normal skiagraphic appearances from birth to maturity and to correlate these with clinical findings. The X-ray pictures are submitted as a standard for comparison and should be of extreme value for reference by the general practitioner as well as by the radiologist.

The study of growing bones has been greatly aided by X-ray examination, as by this method the earliest epiphyseal ossifications may be demonstrated. In the literature of the past scant attention has been paid to the subject and many of the published figures have been far from correct. The subject of epiphyseal separation is ably dealt with and the author rightly points out that it is not possible to decide whether an epiphysis has been separated or the cartilaginous area fractured unless a disturbance of the normal relationship between epiphysis and diaphysis, can be demonstrated.

The author goes on to discuss each region in detail. In the case of the shoulder he differs from many previous writers in affirming that the upper epiphysis is a single one and not the result of union of several centres. The various regions of the skeleton are exhaustively dealt with and excellently illustrated and tables are given showing in what particulars the author's opinions differ from those of earlier observers.

The illustrations are excellent and demonstrate clearly the descriptions given in the text. The author, in common with many modern American authors, is rather too prolix in his historical and other references; some of the tables published contain the results of as many as eleven different authorities. Such presentations are rather tedious to the ordinary radiologist who is not greatly concerned with comparisons between the work of various authorities.

[1] "Normal Bones and Joints: Annals of Roentgenology: A Series of Monographic Atlases, Edited by James T. Case, M.D., Roentgenologically Cosidered by Isidore Cohn, M.D., F.A.C.S., with a Foreword by Rudolph Matas, M.D.; Volume IV.; 1924. New York: Paul B. Hoeber Incorporated. Crown 4to., pp. xxxii. + 219. Price: $10.00 net.

The Medical Journal of Australia

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A Retrospect.

Orthopædic Surgery.

ON etymological grounds orthopædic surgery should be limited to the science and art of remedying deformities in children. In practice it has insensibly been widened to embrace the study of skeletal and muscular disabilities and includes the art of nerve and tendon repair and many other matters not even remotely related to the problem of making a "boy straight." Usage, however, determines the meaning of words and it is in its present-day definition that the term orthopædics is here employed.

The subject that has attracted the attention of orthopædic surgeons more than anything else during the year 1924 is the employment of ramisection for spastic paralysis and analogous conditions. N. D. Royle has continued his studies and has received much valuable help from the late John Irvine Hunter. The results that have been obtained by Royle and by other surgeons who have employed this treatment, have been remarkable. Royle has pointed out the limitations of the operation and has stated that it should not be performed unless the condition to be remedied is dependent on or associated with exaggeration of postural tonus.

N. D. Royle has recommended the use of living sutures in tendon transplantations. The suggestion emanated from Gallie and Le Mesurier who had carried out clinical and experimental work on the transplantation of fascia and tendon. The method has many obvious advantages over the more usual manner of suturing tendons into new positions. L. Mayer continues to work on this subject of tendon transplantation. He calls attention to the necessity of utilizing the sheath of one muscle for the transplanted tendon to lie in.

In tendon and nerve work on the hand S. Bunnell is insistent on the avoidance of trauma and the employment of meticulous care in carrying out the successive steps needed for the repair.

Boiled beef bone pegs have been recommended for the repair of fractured bones. C. Davison and F. Christopher have studied the fate of these bone pegs and have found that in the majority of instances failure results from infection, from incompleteness of mechanical reduction and from absence of immobility. In the few instances in which perfect results were obtained, the dead bone became invaded by living new bone and the new bone ultimately underwent absorption.

Hamilton Russell is opposed to the operative treatment of fracture of long bones save in special circumstances. The treatment of fractures has engaged the attention of American surgeons for a considerable time. In 1922 a conference was held in Boston for the purpose of standardizing this treatment and in the following year a syllabus was drawn up. The reports issued indicate that this movement has produced good effect. It is easy to plan a general scheme for the treatment of such a condition as a fracture, but the results obtained do not necessarily correspond with those recorded on paper.

C. Ballance has made a special investigation into the healing of two ends of divided nerves implanted laterally into a neighbouring uninjured nerve. This experimental work is highly suggestive and should lead to improvement in the technique of nerve repair.

G. H. Klinkerfuss has conducted some useful researches on the fate of transplanted callus. While the replacement of callus by newly formed bone was found to proceed more rapidly than the replacement of solid bone, the ultimate effect was the same whichever material was used.

L. K. Ito has shown that synovia can nourish loose articular cartilage in joints. A further explanation is thus furnished of the persistence of loose bodies in the knee joint.

C. M. Page has advocated the surgical treatment of osteo-arthritis of the hip joint. He recommends operations for persistent pain and for progressive deformity. The operative procedures employed depends on the age and general condition of the patient, rather than on the anatomical condition or the ætiological factors.

E. W. Ryerson has found that it is advisable to perform arthrodesis for the development of lateral deformity that mars many of the operative procedures for crippling foot conditions. The tarsus and the metatarsus are stabilized, but the ankle joint is not touched.

Oto-Rhino-Laryngology.

Disease of the ear is so frequently caused by scarlet fever and morbilli that consideration is given periodically to the otological and rhinological problems involved in these diseases. The points raised at the Otological Section of the Royal Society of Medicine are of interest. Removal of tonsils and adenoid vegetations during the acute stage, immediately after the cessation of fever, was urged, as was incision of the tympanic membrane as soon as signs of congestion are evident. Mastoiditis may be present without any post-auricular swelling or pain. Stereoscopic skiagrams of the mastoid region are regarded as essential aids to accurate diagnosis. The opinion was expressed that in scarlet fever there is a tendency of the infection to invade bone, while in measles the tendency is to involve mucous membranes.

W. S. Syme has devised an operative procedure for the treatment of atrophic rhinitis. It consists in making a bony flap of the mesial antral wall through an opening in the canine fossa. The flap is forced into contact with the septum. The method resembles that of Lautenschläger to some extent. Bowrak has recently published the details of a method of narrowing the nasal lumen for the same purpose. He employs fat for filling in the space. Others have buried grafts of tendon from an ox's foot.

V. E. Negus has put forward a novel theory of the function of the glottis. Having recognized that certain parts of the larynx have nothing to do with voice production, he suggests that these parts are concerned in the fixation of the thorax for forearm movements. The vocal cords prevent air entry, while in man and in a few old world monkeys the ventricular bands prevent the egress of air from the thorax. On the basis of this hypothesis it is proposed that abstinence from forearm efforts should be enjoined when rest of the larynx is desired, while, when it is desired to encourage the formation of the glottis after removal of a vocal cord, muscular exercise should be encouraged.

Cordopexy is the name given by Irwin Moore to a method elaborated by him for overcoming stenosis of the larynx caused by bilateral abductor paralysis of the vocal cords.

Ballance has carried out some ingenious experiments in connexion with the anastomosis of nerves. He has come to the conclusion that the proper nerve for anastomosis with the recurrent laryngeal nerve is the phrenic, in order to obtain recovery of movement in paralysis of the vocal cord. He holds that the glosso-pharyngeal is the nerve to be used for anastomosis with the facial for the recovery of motion in facial paralysis.

An illuminating contribution to knowledge concerning the activity of the ciliated epithelium within the nasal sinuses has been made by Lowndes Yates. He has traced the route of the normal flow of mucus from the several parts of the sinuses to the hypopharynx and has discovered an alteration of the ciliary action in the presence of sinusitis. His findings indicate that the severity of a sinusitis or sinus infection depends on the power of the mucus to prevent its destruction by inspired bacteria. He has suggested that if the property of the mucus be destroyed of preventing the passage of water, the ciliated epithelium becomes progressively poisoned by water-soluble toxins; the poisoning of the epithelium leads to the arrest of secretion of mucus with the result that the bacteria are able to dwell in a symbiotic state in the sinus and their toxins are absorbed and produce remote effects.

The physiology of the larynx and the pathology of its affections present problems which attract many keen workers. J. S. Fraser has pointed out that fractures of the skull arising in the *sella turcica* and passing backwards through the middle ear cleft to the external auditory canal do not involve the inner ear, unless the fissure is directed toward the petrous pyramid. Transverse fractures of the skull, however, are always associated with an injury to the labyrinth. The same investigator has made some important observations in connexion with tuberculous disease of the ear.

In regard to the vestibular reflexes Magnus, of Utrecht, has demonstrated that the utricles are

the site of origin of the tonic reflexes in the body musculature and the symmetrical righting reflexes. The saccules give rise to the asymmetrical righting reflexes and the vertical compensatory eye positions. In certain cases of vertigo it has been possible to demonstrate disturbances which are regarded as referable to otolithic impulses to the effect of neck movements or to a combination of both.

Mygind has investigated the production of the labyrinthine fistula symptom and maintains that the symptom is merely an otolith reaction produced by an adequate irritation.

Rejtö has called attention to the unreliability of the tuning fork in distinguishing lesions of the auditory nerve from those of the conducting apparatus. He has suggested a new physiological division of the organ of hearing. In his classification he includes under the term "conduction apparatus" (i.) physical stimuli transmitted through the external and middle ear, through the two windows and through the labyrinthine fluid and (ii.) physiological stimuli transmitted through Corti's organ and through the eighth nerve and its tracts. He places stimuli interpreted in the cortex under the "perceptive appartus."

Radiology.

Examination with the aid of X-rays has become an essential in the majority of patients; it has been estimated that 90% of patients entering the large general hospitals pass through the radiological departments. Great accuracy is obtained by expert radiologists in examinations of persons with gall bladder disease and duodenal ulcer. Carmen has claimed that he has made correct diagnoses in 95% of examinations of gastro-duodenal disease. Australian workers and others have obtained equally good results.

It has been computed that gall stone shadows can be demonstrated in 30% of those with cholelithiasis, while in a further 10% a thickened gall bladder can be recognized. It is generally admitted that while definite radiological evidence is of great diagnostic value, the absence of a distinct shadow does not exclude the presence of gall stones. An opaque meal is given for these examinations and pressure defects from a distended gall bladder can be detected in the shadows of the pyloric antrum, duodenum or hepatic flexure of the colon. Australian radiologists have recommended the adoption of the oblique position with the patient rotated to the right and the tube placed in front of the patient. In this way the shadow of gall stones and affected gall bladder is thrown away from the kidney shadow. It thus becomes possible to distinguish between a shadow produced by the gall bladder and a shadow produced by the kidney.

Much progress has been made in connexion with radiography of the chest. In this work as in gastric and duodenal work, only expert interpretation is of value. Very small and early tuberculous foci can be demonstrated at a time before other signs are noted. Rapid exposures at from one hundred and twenty to one hundred and eighty centimetres from the tube reveal extremely fine detail of the lungs. Silicosis cannot be diagnosed by means other than X-rays. It has been the experience of members of the Commission of Inquiry at Broken Hill and of others who have investigated this subject, that it may become far advanced before any physical signs can be elicited.

In connexion with treatment the attention of radiologists has been directed to the use of short waves. Valuable work in this field has been carried out in Australia by Molesworth, Clendinnen, Flecker, Harrison and others. Their results compare favourably with those of workers in other parts of the world. Deep X-ray therapy is a valuable addition to the therapeutic measures in malignant and other diseases. The best results are obtained when close cooperation between the surgeon and the radiologists can be secured. Too many patients are referred to the radiologist when their disease has reached an incurable stage.

Pre-operative and post-operative radiation of mammary carcinoma is practised in many clinics. It is claimed that the number of patients cured of cancer has been greatly increased at the clinics where this procedure is adopted.

A movement is on foot for the establishment in the large cities in Australia of central cancer institutes at which modern high voltage X-ray apparatus are installed. The financial burden of the installation and working of these machines on the public hospitals is a heavy one. In addition

it has been pointed out that the nature of the work and the time required for each treatment render it imperative for radiologists to demand remuneration. The treatment should be available to rich and poor alike.

Bacteriology and Immunology.

The year's record of bacteriological and immunological work is a valuable one, although the number of important new discoveries is not large. In the study of the pneumococci the subject of the growth inhibition has been investigated by O. H. Robertson and R. H. P. Sia and by H. J. Morgan and O. T. Avery. L. D. Felton and K. M. Dougherty have studied the virulence of this organism. R. Webster has investigated the incidence of the several serological types of pneumococci in children. His observations have been mentioned under the caption of "Pædiatrics." Beatrice A. Warner has also noted a seasonal incidence of the types of pneumococci; she found a high incidence of Type I. in adults and a low incidence of Type II..

As has already been mentioned, G. F. Dick and Gladys H. Dick have put forward a claim that they have isolated the causal organism of scarlet fever in the form of a hæmolytic streptococcus. They have treated horses with the toxic filtrate of broth cultures of the hæmolytic streptococcus recovered from the throats of patients suffering from scarlet fever. The serum of the treated horses is said to have acquired antitoxin properties. The therapeutic value of this serum has still to be determined, but C. F. Branch and F. G. Edwards as well as A. Zingher, have confirmed its value as a diagnostic agent. The subject of the agglutination and absorption of the streptococcus of scarlet fever has been studied by F. A. Stevens and A. R. Dochez and the agglutination of other streptococci by G. S. Shibley. The latter suggests that refractory granular strains may be rendered less granular by growth at room temperature and that these strains are then agglutinated in the ordinary manner when the medium has a hydrogen ion concentration of seven to eight.

The question of iso-agglutinins in human blood continues to command attention. Hooker and Anderson have succeeded in producing specific agglutinating sera in rabbits for the four groups of human erythrocytes and in some instances they have separated the different antigens by absorption. Guthrie and Huck have confirmed these observations and have applied the methods of these workers in further investigations into the agglutinating properties of two aberrant types of Group II. blood previously described by them. They have been able to confirm their earlier observations. More recently L. Latter and A. Cavazutti have challenged the interpretation of Guthrie and Huck of the anomalous behaviour of the blood of the persons investigated. G. M. Heydon and T. W. Murray have recorded the results of blood group determinations in Melanesians. They have found that the biochemical index of these natives of the Mandated Territory was 1.54; they should therefore be placed in the intermediate group of the Hirschfelds.

The work of d'Herelle, Bruynoghe and Maisin and of Beckerich and Hauduroy has suggested to J. Smith the possibility of treating patients suffering from enteric fever with the corresponding bacteriophage. In five out of seven patients so treated an immediate lysis followed the administration of the bacteriophage. P. Hadley has evolved a method of staining with Löffler's methylene blue polychrome the lytic areas produced on agar slopes by the bacteriophage.

Comparative studies of the Wassermann and the flocculation tests have been carried out by many workers including F. Green and E. W. Todd. Kahn's flocculation test is favoured by many investigators, as being more sensitive than the Wassermann test in early and in treated syphilitic infections. Kolmer's antigen for use in the Wassermann test has been recommended by several American workers. Other aspects of the Wassermann test have been studied by Mona Ross and A. H. Tebbutt and by C. H. Shearman.

Ivan Maxwell has continued his investigations into the phenomena of anaphylaxis and its relation to the diagnosis and treatment of hay fever and asthma. He has found that the pollens of rye grass, cape weed and cocksfoot are largely responsible for the appearance of hay fever in Victoria.

Georges Dreyer and R. L. Vollum have reported the successful application of a precipitin test to the standardization of old tuberculin.

Morbid Anatomy.

In 1914 at the Australasian Medical Congress in Auckland W. A. T. Lind reported a series of cases of epiloia, a syndrome of mental deficiency, *adenoma sebaceum* and epileptic fits. He has recently published a well illustrated paper wtih a more complete description of this interesting complex. The disease is a hypertrophic sclerosis of the cortex of the cerebrum with nodular swellings on the floor of the lateral ventricles. It is nearly always associated with *adenoma sebaceum* and with growths in the kidneys and more rarely in the spleen and lungs. It is accompanied by mental deficiency and sooner or later by epilepsy. Lind has discussed the morbid anatomy and ætiology of the disease, but confesses that the cause is at yet unknown.

From time to time when patients suffering from abdominal symptoms are subjected to operation, the surgeon experiences great difficulty in discovering changes gross enough to account for the symptoms. Careful observation has revealed that in some of these patients bands, kinks or membranes are not uncommon, sometimes alone, sometimes associated with visceroptosis of varying degree. The subject has received consideration by F. A. Hadley in his Listerian oration on deformities of the alimentary tract, by Walton in his book on the so-called surgical dyspepsias and by R. Hutchison.

In the study of cancer perhaps the most fruitful piece of work during the year is that of A. Leitch who has succeeded in producing cancer in the gall bladder of the guinea pig by introducing into its lumen gall stones or small pebbles. Hitherto cancer has been produced experimentally only by irritants of extrinsic origin, such as *Spiroptera neoplastica*, coal tar, tar extracts, pitch, soot, arsenic, shale oil and industrial oils derived from shale, crude petroleum and lubricating oil and X-rays. In addition to these cancer-producing agents there are others in the human subject, the relation of which to cancer cannot reasonably be doubted. Proof of this ætiological relationship, however, has not been adduced. The heat of the Kangri pot is said to cause epithelioma of the thighs and abdomen among the natives of Kashmir; the betel preparations are associated with buccal cancer in Asia; bilharzia ova appear to induce vesical and intestinal cancer in Egypt and Japan. These known irritants, however, are responsible for a very small proportion of the cancers that occur. If the irritation theory of cancer is to be established, search must be made for possible internal irritants, because the majority of the agents responsible for malignant tumours are probably endogenous. It was with these ideas in mind that Leitch undertook his investigations on gall stones and cancer of the gall bladder in guinea pigs, animals which enjoy considerable natural immunity to cancer. The results have been successful beyond his hopes.

Patients occasionally die suddenly after confinement or operation and the clinical diagnosis made is pulmonary embolism of thrombosis. It is often difficult to determine after death whether a clot has been carried from a distance or formed *in situ*; if formed in the lung, the question arises whether it is a clot due to disease of the pulmonary artery or merely a nucleo-protein clot, such as is commonly seen when death is due to pneumonia or prolonged suppuration. At the annual meeting of the British Medical Association at Bradford Lockhart Mummery said that pulmonary embolism was not always fatal; he thought that many attacks supposed to be due to post-operative pneumonia were actually the result of pulmonary embolism. The operation preceding pulmonary embolism was usually on the abdomen and the lower limbs. He did not support the contention that embolism was due to sepsis. His hypothesis was that the operation predisposed to embolism by liberating thrombokinase into the circulation and by producing venous stasis near the great veins. Shaw Dunn expressed the opinion that pulmonary embolism was seldom found to be the cause of death after an operation. When the embolism was fatal the morbid appearances were more or less uniform; an enlongated mass of red clot was found coiled up at the bifurcation of the pulmonary artery. Some degree of septic infection frequently existed. E. Glynn produced evidence that primary pulmonary thrombosis was a cause of sudden death and was more frequent than pulmonary embolism. Stasis and mild sepsis were two main factors in the production of the thrombus. Stasis could be diminished by post-operative exercises, including deep breathing.

Abstracts from Current Medical Literature.

BACTERIOLOGY AND IMMUNOLOGY.

A Method of Staining Lytic Areas Produced by the Bacteriophage.

PHILIP HADLEY (*Journal of Bacteriology*, July, 1924) describes a method of staining lytic areas produced by the bacteriophage. One cubic centimetre of a well-polychromed Löffler's methylene blue is pipetted over the agar slope culture, the tube being tilted so that the stain is in contact with the bacterial film for about one minute. The stain is then washed off by adding distilled water with a pipette and blowing it over the slanted surface. The tube is then rinsed with more distilled water or immersed in a jar of a 1 in 1,000 solution of mercuric chloride and dried with a cloth. The lysed areas will now stand out as red or reddish-violet areas against the unlysed areas which are colourless or a faint greenish-blue. Ordinary methylene blue or a non-polychromed Löffler's methylene blue do not yield the typical differential colouring. Staining is more intense if the stain is heated to 60° C. before being added to the agar slope. Care must be taken to prevent the stain running down the sides of the tube between the agar slope and the wall. Better results are obtained if staining is carried out twelve to twenty-four hours after the lytic areas have obtained their maximum size.

The Action of Bacteriophagic Serum on the Bacteriophage.

LLOYD ARNOLD AND EMIL WEISS (*The Journal of Infectious Diseases*, November, 1924) investigated the action of antilysins upon the lysins of the bacteriophage and the passive immunizing of a susceptible bacterium against the lytic activity of a bacteriophage. Bacteriophage that was active to members of the coli-typhoid group was used and the bacteriophagic suspensions were prepared by d'Herelle's and the bottom-layer-agar methods. *Bacillus typhosus* was used in all the experiments and the antilytic unit was determined as the smallest amount of antilytic serum that would cause normal growth when added to the surface of an agar plate seeded with a loopful of bacteria and one unit of bacteriophage. The precipitin, agglutinin, opsonin and amboceptor content as well as the antilysin content of the antisera were determined. The authors found that susceptible bacteria grown in antilytic serum do not acquire immunity against the lytic activity of the bacteriophage and that although the presence of susceptible bacteria causes a decrease in the agglutinins, opsonins and amboceptors for the homologous bacteria, the antilytic power of the serum is not affected. The factors of time, temperature and filtration have the same effect upon the lysin-antilysin union as upon the toxin-antitoxin union in mixtures of similar concentration. Lysin-antilysin union was found to follow the same laws of definite proportion as the toxin-antitoxin union. The conclusion is that antilysins belong to the same group of antibodies as antitoxins and antiferments.

The Use of Anti-Meningococcal Serum.

A. FELIX AND R. YUNOWICH (*Journal of Immunology*, May, 1924) draw attention to the necessity for the serological examination of therapeutic serum to be used in practice on the strains of meningococci isolated in various countries and in various epidemics. They state that from 1909 to 1911 one hundred and eighty-two patients suffering from cerebro-spinal meningitis were treated with serum in the Jerusalem Jewish Hospital with a mortality of about 20%. Since that time several infections have occurred in which specific serum therapy failed in a large majority of instances. A mortality of 55% was recorded among forty patients in 1917; of 59% among one hundred and forty-four patients in 1918 and of 48% among forty-three in 1919. In view of these poor results the meningococci isolated from two sporadic infections were subjected to closer serological examination. Three of the sera examined had been received from America, three from Dresden and one from England. It was found that with only two of the American sera was agglutination of the strains of meningococci obtained or a reaction to the complement fixation test secured. The other five sera examined had no effect.

The Anaerobic Spore-Bearing Bacteria of the Human Intestine.

MORTON CHARLES KAHN (*The Journal of Infectious Diseases*, November, 1924) records the results of a study of the anaerobic bacteria found in the human intestine in certain diseases. The study was undertaken in the hope of establishing some connexion between the anaerobic bacteria and the conditions of chronic diarrhœa, intestinal toxæmia, chronic arthritis, chronic eczema and urticaria and pernicious anæmia. The author submits a summary of the work of various investigators and a classification of the anaerobic spore-bearing bacteria and presents a technique which he has found satisfactory for isolating and purifying these organisms from intestinal sources. *Bacillus welchii* was recovered in larger numbers from the stools of patients suffering with intestinal toxæmia than from the controls and the possibility of this organism being the causal agent of this condition will be further considered. The other anaerobes recovered from the stools of these patients occurred with the same frequency in the stools of the controls and accordingly no significance was attached to their presence. In the cases of chronic diarrhœa no evidence was forthcoming to justify an attempt to correlate the presence of anaerobic bacteria with this condition in adults. In the stools from half the cases of chronic eczema and urticaria investigated non-proteolytic anaerobes were recovered. Spore-bearing anaerobes were found to occur in larger numbers in the stools of patients suffering with chronic arthritis than in the control cases, but the species of anaerobes isolated showed little constancy. In twenty-four cases of pernicious anæmia an examination of the stools revealed the presence of large numbers of *Bacillus welchii* which occurred almost invariably to the exclusion of other anaerobic bacteria. A more detailed study of the possible association of this organism with pernicious anæmia is being made as these findings are regarded as at least suggestive.

The Anæmia of Lead Poisoning.

JOSEPH C. AUB, PAUL REZNIKOFF AND DOROTHEA E. SMITH (*Journal of Experimental Medicine*, August, 1924) present the following facts in explantation of the anæmia of lead poisoning. In the course of experiments carried on *in vitro* it was found that the exposure of red blood cells to a very small amount of lead greatly changes the surface of the red cells. The permeability of the cells to water is altered and they shrink and are incapable of swelling as much as normal cells. A variation in the resistance of the cells to different osmotic surroundings also occurs. The cells exposed to lead are short-lived and hæmolyse readily as the result of slight trauma. It was also found that red blood cells after exposure to lead are no longer agglutinated by the sera of different iso-agglutinating groups. The physical changes which do not affect the physiological properties of the hæmoglobin within the cell, are the result of a chemical reaction and this takes the form of a precipitation of insoluble lead phosphate and the formation of acid. This causes the cells to become contracted, inelastic and brittle and so unable to withstand the trauma encountered in the circulation of the blood.

The Production of Immunity Against Plague by Vaccine.

J. MORISON, B. P. B. NAIDU AND KHAN BAHAPUR C. R. AVARI (*The Indian Journal of Medical Research*, October, 1924) in a series of three papers give the results of an investigation undertaken with a view to improving or modifying the preparation of plague vaccine without reducing its potency. It was hoped that a reduction of the dose (usually four cubic centimetres) of Haffkine's vaccine might be possible and that the local pain and constitutional disturbance which usually follow the administration of such a dose, might accordingly be considerably lessened. During the carrying out of experiments it was found that the sediment of Haffkine's vaccine is practically valueless as an immunizing agent,

while the supernatent fluid is equal to the whole vaccine in immunizing power and produces less toxicity. Professor Dreyer's method for preparing defatted bacterial vaccines was tried in the case of *Bacillus pestis*, but it was found that when treateu with acetone and "Formalin" the vaccine lost all immunizing properties. An attempt to prepare the vaccine with agar cultures instead of with cultures in nutrient broth did not yield encouraging results, the former possessing less immunizing power and being scarcely less toxic. The oral administration of the plague vaccine with bile or of the vaccine alone according to the method of Besredka, failed to produce any immunity in guinea pigs so treated. The authors therefore conclude that attempts to improve the preparation of Haffkine's prophylactic vaccine on the lines indicated have not yielded results which would justify any modification of the present methods of preparation.

HYGIENE.

Tar Cancer in France.

PAUL COURMONT (*The Journal of State Medicine*, November, 1924) points out that tar cancer is relatively frequent in England while researches show it to be extremely rare in France. He inquires into the causes of these facts and their bearing on industrial hygiene. In England from January, 1920, to June, 1922, forty-nine men were found to be affected with suspicious ulcerations requiring surgical intervention, a proportion of 2%. In France inquiry into cancer and suspicious ulcerations occurring in the tar and pitch industries in the south-eastern industrial centres revealed but four cases. Tar and pitch cancer is therefore extremely rare in France and the author asks the reason for this difference in similar industries. He thinks that the nature of the industrial products used must be taken in account as pitch is much more dangerous than tar and it is especially in the manufacture of briquettes with pitch dust that persons affected by cancer are seen. But pitch and tar have two different origins and their composition varies accordingly. They may be derived from gas works or from a factory producing coke for blast furnaces (coke oven). Tar and pitch present a toxicity differing according to their origin. In Scotland it was demonstrated that tar from coke furnaces contained no anthracene or naphthalene and differed from other tars. Moreover during twenty-three years this tar has been distilled and no single case of cancer had been noticed among the pitch workers. Legge who visited these factories found "neither cancers, warts nor other ailments when the workmen were exposed to the rays of the sun." He also points out that: (i.) Pitch from gas tar is injurious, but not that from coke oven tar; (ii.) distillation of gas tar at 148.8° C. produces a harmless pitch (soft pitch). It is then probable that the variation and the increased frequency of lesions produced by these agents in different countries must be sought in the constitution of the tar and the pitch and the author points out that English and Belgian coal would give more noxious products. In conclusion he points out that prophylactic measures are important in France, as in England, for pitch workers. They include: (i.) The wearing of goggles by pitch workers; (ii.) work in the open air and diminution of pitch dust; (iii.) the wearing of suitable clothing which must be frequently washed and strict cleanliness; (iv.) provision for immediate attention to burns and other accidents to the surface skin.

Occupational Therapy in the Sanatorium Treatment of the Tuberculous.

G. L. BELLIS (*Archives of Occupational Therapy*, October, 1924) points out that sanatoria are built and maintained for the purpose of giving to the tuberculous the best possible opportunity for recovery, to teach them the principles and practice of personal hygiene and sanitation and in order to enable them to return to the community, if at all possible, as self-supporting and perhaps as family-supporting citizens. Tuberculosis is generally a chronic disease, the sufferer enduring a period of partial or complete invalidism. Thus the time element is an important factor in the consideration of persons ill with tuberculosis. The author points out that in addition to hygienic dietetic measures, such as physical rest, pure out-of-door air, sunshine, nourishing food and so forth, there is another important point in treatment of the individual, the requirements of which have not as yet been fully appreciated. The part of the individual which exercises a powerful influence for or against recovery is the patient's mind. At all successful sanatoria careful supervision is undertaken of the hours of rest, the quantity of food and the amount of physical exercise permitted. Of late years another measure has been introduced which takes favourable recognition of the time and mind element and assists in returning to the community a self-supporting citizen—this measure is "occupational therapy." At the sanatorium under the supervision of the author occupational therapy has been styled "industrial recreation" partly because the occupation was sufficiently use to prove industrial and partly because it was sufficiently attractive to prove recreative. After eight years of experience the author points out that occupational therapy promotes recovery from tuberculosis by substituting directed and supervised physical activities for activities which are undirected and unsupervised. It is the means of substituting the normal mental activities of an industrious life for the abnormal mental activity of an idle life. It enables children undergoing treatment to continue school under hygienic conditions. It prolongs the stay of patients at sanatoria by adding interest which is extremely attractive. It simplifies the problems of administration especially in the matter of discipline and promotes in no small degree a most wholesome institutional atmosphere. In conclusion the author issues warning that all forms of therapy have their limitations and unless occupation for patients undergoing treatment is medically prescribed, skilfully administered and efficiently managed, untoward effects will become manifest and thus bring about undeserved reproach upon the method.

Silicosis: A Modern Factory Health Hazard.

JAMES BRITTON (*Journal of Industrial Hygiene*, September, 1924) discussing the subject of silicosis in modern factories states that the dust which produces an immediate and rather violent reaction, is usually eliminated and that which does not produce very much immediate reaction, is retained. The injurious effects of dusts in general, apart from the few unusual dusts which are harmful on account of their toxic properties, depend on: The smallness of the dust particles; the angularity of the particles; the degree of insolubility and the difficulty with which the substances form chemical compounds. Silica is the only dust which has been found to be a serious occupational hazard. It is intensely hard and when broken separates into minute angular particles which are insoluble in the body fluid. Because of the smallness of the particles it is possible for them to enter the smallest air spaces in the lung, but practically no immediate irritation is produced in the lung tissue. The epithelial cells do not throw off the particles nor is there the usual desquamation with the result that the dust particles become permanently embedded, causing a slow but gradual and persistent transition at the normal cellular structures into fibrous issue. The author points out that it is erroneous to think the hazard from grindstones is eliminated if water is used, because the spray which comes from a wet grindstone carries the dust with it and the dust is just as readily inhaled when moist as when dry. A deposit of silica in the lungs can never be removed and it is important to remember that fibrosis once started continues to progress even after the exciting cause is removed. The condition is usually complicated by infection frequently tuberculous and death results from both silicosis and the infection. In conclusion the author points out that there is a wide variation in the length of life after total disability has occurred. In comparatively few instances the patient lives some time and death is due to another cause. In his experience, however, the great majority live less than two years after becoming disabled. The length of life seems to be determined largely by the nature and the severity of the infection complicating the silicosis.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE WESTERN AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Perth Hospital on September 17, 1924, DR. D. P. CLEMENT, the President, in the chair.

Scleroderma.

DR. D. M. MCWHAE, C.M.G., C.B.E., showed a man, aged thirty-one years, who had been ill for twelve months. He had had occasional pain and swelling of his knees and ankles, swelling of his hands and sores on the knuckles and on the soles of his feet. The skin had become darker at the same time. There had been extensive pigmentation of the skin as occurred in Addison's disease and also patches of pigmentation in the mucous membrane of the mouth.

The fingers and toes were cold and blue. Scars of healed ulcers were seen on the knuckles and soles of the feet. The skin from the region of the elbow to the finger tips was so firm and hard that it could not be pinched up; dermatographia was evident. The skin of the ankles and feet was in the same condition. The intense nature of the pigmentation suggested Addison's disease, but this disease was not accompanied by trophic and vasomotor changes of the hands and feet. There was no enlargement of the spleen or liver. The urine did not contain sugar and there was no evidence of hæmochromatosis. Syringo-myelia was excluded by the absence of signs of spinal cord disease. The patient had served for four years in the Serbian Army during the war. Pellagra therefore had to be considered as a possible diagnosis. The skin pigmentation, however, was quite unlike that of pellagra. Dr. McWhae believed that the disease was the diffuse form of scleroderma. The thickening of the skin was characteristic. Scleroderma was accompanied by extensive pigmentation, arthritis troubles and signs of Raynaud's disease. The patient's hands were in a condition known as sclerodactylia. The disease was chronic and lasted for months or even many years. Recovery or arrest had been stated to have occurred occasionally. The thyreoid gland had been found to be atrophied; thyreoid feeding was the treatment that gave the best results.

Cancer of the Cervix.

DR. D. S. MACKENZIE, D.S.O., presented a woman who had been subjected to a course of radium treatment for cancer of the *cervix uteri* six months before. This case had been spoken of at a previous meeting. The general condition of the patient was excellent. No growth was then palpable and there had been no hæmorrhages since the treatment. He mentioned two other patients who were doing well under treatment with X-rays.

Spindle-Celled Sarcoma of the Broad Ligament.

DR. R. F. MAY read notes of the case of a woman who had suffered from a spindle-celled sarcoma of the broad ligament of enormous size. This report was published in THE MEDICAL JOURNAL OF AUSTRALIA, January 3, 1925, page 15.

Tumour of the Orbit.

DR. H. J. LOTZ showed a woman for diagnosis. She had a tumour which had originated in the orbit and had encroached over the right cheek and forehead. The tumour had been of slow growth and felt like a fibrous tumour. Dr. Lotz suggested the possibility that it was a neurofibromatosis. In this event at least two divisions of the fifth cranial nerve would be implicated.

MR. F. A. HADLEY suggested that the growth might prove to be sarcomatous.

Epithelioma of the Tongue.

Dr. Lotz also exhibited a man suffering from a clinically typical epithelioma of the tongue. There was no glandular enlargement.

Skiagrams.

DR. A. SYME JOHNSON showed a series of skiagrams of bone abnormalities. The first was an abnormal development of the frontal sinuses, both of which apparently extended as far as the vertex. The patient had been under the care of Dr. H. J. Gray. The second was a remarkable development of the styloid processes in a woman aged forty-five years. Both processes were clearly seen. From measurements made of the skiagram it seemed that the processes were over seven and a half centimetres in length.

Dr. H. BALDWIN GILL said that very little inconvenience had been caused, although the patient had complained of a lump in her tonsils accompanied by occasional pain. The sharp tip could be palpated like the point of a skewer inbedded in the tonsil. Cases had been recorded in which the tip of a styloid process or an ossified stylo-hyoid ligament had been found in the tonsil after enucleation.

Pathological Specimens.

DR. D. S. MACKENZIE showed two very interesting specimens of advanced aortic aneurysm. One of these had occurred in a labouring man who had been in constant work until the moment of his death. He had been laying a brick path. The bodies of four or five vertebræ was almost completely eroded, but the inter-vertebral discs were practically intact.

Dr. Mackenzie also gave a demonstration of the method in use at the Perth Hospital of estimating the urea content of the blood. He exhibited some microscopical sections of pathological tissues.

A MEETING OF THE WESTERN AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Public Hospital, Perth, on October 15, 1924, DR. D. P. CLEMENT, the President, in the chair.

Pneumonia.

DR. C. JOYCE read a paper entitled: "Some Cases of Pneumonia of Uncommon Type" (see page 77).

DR. D. P. CLEMENT thought that the majority of the cases reported by Dr. Joyce did not ring true as pneumonia. He thought they had been influenza. He considered that the dulness to percussion in the absence of tubular breathing was due more to congestion than to consolidation. Dr. Joyce's results were excellent. There were certain forms of acute toxic pneumonia for which nothing could be done. The patients died in spite of any treatment. He was doubtful of the advisability or the necessity for such prolonged starvation in the treatment.

DR. D. S. MACKENZIE, D.S.O., who had seen the first patient described by Dr. Joyce, thought that the nodes on the legs were due to *erythema multiforme* rather than to *erythema nodosum*. He considered that this condition might arise with any infection in which there was a streptococcal element. He expressed the opinion that the dulness without tubular breathing was due to a thickening and swelling of the pleura. He regarded Dr. Joyce's dietetic treatment as revolutionary and unnecessary. Alcohol was very useful in any acute infection accompanied by gastric atony and could be largely metabolized. He referred to the prevalence in Perth of epidemic hiccough. He had seen one instance in which the landlady of a patient could not be convinced that the patient was not drunk. He mentioned recent research into epidemic hiccough and said that preparations from tonsillar exudate had been injected into monkeys and had caused a condition similar to hiccough. Further injections had given rise to encephalitis. Iodine had given the best results in treatment.

DR. J. K. COUCH thought that it was bad treatment to nurse pneumonia patients in the open air on balconies.

DR. W. H. NELSON expressed the opinion that the patients described by Dr. Joyce had suffered from influenza. The fall in temperature by lysis was typical of that condition. He obtained good results by using calomel and magnesium sulphate at the outset and by the routine administration of a mixture containing citrate of potash and digitalis. He thought that poultices were very useful if pain were present. He inquired whether Dr. Joyce used any routine medicinal treatment.

DR. FERGUSON STEWART thought that the condition in the first patients described had been influenza. He said

that "Antiphlogistin" was useful in superficial chest inflammation and that the hot bottle was very comforting. He was in favour of reduced feeding for three or four days, but considered that Dr. Joyce carried starvation too far.

DR. R. H. CRISP thought that reduced feeding was necessary in the pneumonia of infants and young children on account of the tendency towards gastric distension and meteorism with anorexia and vomiting. He always used partially citrated milk to aid digestion of the curd and to counteract the tendency to acidosis which Dr. Joyce had mentioned. He expressed the opinion that the child described by Dr. Joyce had possibly died of *otitis media*. This was a very common complication in children and might be present without any symptoms. He held that lobar pneumonia of infants conformed to one of three types. The first type was red and was characterized by the ordinary flushed, grunting infant for whom the prognosis was very good. The second type was blue; cyanosis was present and moist sounds and congestion were prominent. The third was the white variety. Here toxæmia, anoxæmia and myocardial involvement were the dangerous features. The colour was a ghastly white and death was not unusual. He thought that oxygen was necessary particularly in the blue and white types in which anoxæmia was present. Its administration, however, should not be left until the patient was moribund. Strychnine and atropine were useful when there was congestion with bubbling and when moist sounds could be heard in the lungs. Of other stimulants those chiefly favoured were brandy, camphor, caffeine and a mustard pack. The last named was particularly useful in collapse. In his opinion pneumonia accompanying whooping cough responded well to outdoor nursing.

DR. F. CLARKE thought that equivocal chest signs with dulness, but not tubular breathing, were usual in influenzal pneumonia. In regard to the use of digitalis he held that it was better to start with moderate doses and to increase them as required. The effects of digitalis were cumulative. He was of the opinion that leeches gave more relief from pain than any other local application.

DR. JOYCE in reply thanked the members for the helpful criticism of his paper. He agreed that congestion and swelling of the interstitial tissues with blocking of the air spaces were the best explanation of the chest signs. His patients did not get absolute starvation. Orange juice had one third the caloric value of milk. He used no routine, but only symptomatic medicinal treatment. He had been carrying out water treatment in pneumonia for fifteen years. He had commenced with observation of its beneficial effect in gastro-enteritis of children. His experience had induced him to extend it to other acute infections with nothing but happy results. In spite of the contrary opinions expressed by members he would go on using it.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, Adelaide Street, Brisbane, on November 7, 1924, DR. D. GIFFORD CROLL, C.B.E., the President, in the chair.

Gun-Shot Wound of the Skull.

DR. J. LOCKHART GIBSON reported a case of gun-shot wound of the skull with destruction of both occipital lobes (see page 86).

Deep X-Ray Therapy.

DR. A. T. NISBET read a paper entitled: "Twenty-one Months' Experience with Deep X-Ray Therapy." This paper was published in THE MEDICAL JOURNAL OF AUSTRALIA, January 3, 1925, page 9.

DR. VAL MCDOWALL said that at the beginning of the twentieth century it had been discovered that radium and X-rays exerted a somewhat selective action on proliferating tissue cells. The more rapidly proliferating or embryonal the type of cell, the more susceptible it was to radiation. The more malignant tumours, for example the squamous carcinomata, were still just as resistent to radiation by deep therapy as they had been in the days before the advent of deep therapy. The results on the more easily affected tumours had improved during recent years owing to improved methods of measuring dosage, more than to the type of therapy used.

There were three types of radiation: (i.) Radium, (ii.) deep therapy and (iii.) medium rays. In all three there was used a beam of rays which was not homogeneous, but which consisted of rays of different wave lengths. Adherents of the radium school used the shortest wave lengths. Next the members of the deep therapy school used a wave length in which there was a fair proportion of the shorter wave lengths and in which the shortest wave lengths approximated in length to that of the radium school. Next came the medium ray school whose radiation had rather a small proportion of the very short wave lengths, but in which there was a preponderating quantity of rays of a medium wave length. All three schools filtered off the softer rays or long waves which affected the surface only.

Theoretically, the shorter wave lengths were those which penetrated the furthest and which affected neoplastic cells the most. Therefore, theoretically, it should be from radium that the deepest and most satisfactory results should be secured, provided the time factor of exposure be long enough.

Now the members of the deep therapy school claimed that they could produce a much larger quantity of hard rays, almost approaching those of radium and could apply them over a much larger area in a shorter space of time. Dr. McDowall thought that this was a justifiable claim. But what he did not think justifiable was that they should claim a deeper effect with their rays than with radium. In experimental rat sarcoma, even after several days' exposure to fifty milligrammes of radium implanted in the centre of a sarcoma, sections taken a few centimetres distant from the radium still grew after transplantation into other rats.

He had not the time to do more than quote a few opinions of well-known authorities and those present would see that they were not altogether favourable to the deep therapy method.

In extracts from papers by Dr. Louis Herley, of New York City, it was stated that Schaefer's results after a five years' period of operable and "border line" cancer of the cervix, consisted of 48.6% cures by operation and 25% by radiation.

Perthes's result of post-operative treatment of breast cancer with Erlangen technique and apparatus compared with patients not treated by X-rays were shown in the accompanying table:

RECURRENCE IN FIRST YEAR AFTER OPERATION.

Treatment	No. of Cases.	Recurrence in First Year.	Metastases Without Local Recurrence.
No radiation	130	28%	11%
One X-ray treatment	70	38.5%	38%
Several X-ray treatments	74	37.5%	14%
Intense X-ray treatment	72	41%	18%

Tietze, of the Leipzig Clinic, was of the opinion that prophylactic post-operative X-radiation in surgical carcinoma was disappointing in its results. But he held that sarcomata, with the exception of the operable sarcomata of the jaw and operable myeloid sarcomata, should be treated with X-rays either with or without surgery. A certain number of these tumours also were refactory to X-ray treatment.

E. Gnant, of Albers-Schonberg Department in Hamburg, referring to post-operative treatment of breast cancer, said:

> We must admit that we are far removed from a victory of the X-rays over breast cancer. . . . We have attained a three years' freedom from recurrence in 50%, a figure which is considerably exceeded by the purely operative statistics of most clinics.

At the Auschultz Clinic in Kiel 60% of two hundred and thirty patients manifested more than a five years' clinical cure after post-operative X-ray treatment of breast cancer.

Holzknecht speaking of the results in the Vienna school said:

> In spite of the most phenomenal results obtained in a few cases, the fact remains that all the technical improvements in the world will not enable us to triumph over the carcinomata absolutely.

The most important opinion, however, was that of Robert Knox, who had written in the *British Journal of Radiology* on August 7, 1924, that:

> There exists a good deal of support for the use of the lethal dose *in vivo*, but in the majority of cases of new growth treated clinically the administration of a lethal dose to the whole of a large tumour is a practical impossibility, because the reactionary or secondary effects would be so great that the death of the whole organism might follow and that some other method than the single intensive dose must be looked for if we are to hope ever to deal successfully with new growth by the use of radiations. There are several alternative methods: First, the divided dose and if the lethal dose is the aim, then the object is to give the complete dose in as short a time as possible, consistent with the safety of the patient, devoting, say, a week to the complete dose.
>
> On the other hand, theoretically it has been recognized that if the cells are more vulnerable during the stage of their existence, the tumour should be subjected to radiation over a long period of time.

The article concluded with the following paragraph:

> It is clear to most radiologists that the cure of carcinoma by radiations is at present beyond our reach, and that to claim cure would be to retard indefinitely the progress of radiotherapy in the treatment of cancer. To establish the proof of a definite degree of control would be a great step forward in the attack upon this intractable disease.

In a discussion on deep X-ray therapy, appearing in *The British Medical Journal* on March 29, 1924, pages 572 to 574, Dr. Knox expressed the view that deep X-ray therapy was not new, but was an extension of superficial therapy, and the matter resolved itself into a question of wave length. In general, the effects of deepX-ray are uncertain and mostly so in carcinoma.

In the same discussion Dr. William Mitchell had said that he believed it useless to promise cures by deep X-ray therapy.

Mr. Sampson Handley had said that the time was past when surgery alone could deal with malignant disease. The help of the radiologist was necessary. Also that he was not sure that deep X-ray therapy was the help sought and needed. He believed that a mean must be found between the extremes and that the balance had not yet been struck.

Dr. McDowall said that he was prepared to be converted to deep therapy methods when they could show him results better than those achieved by the medium therapy, but up to the present he had not seen any results from deep therapy which had not also been obtained by suitable doses of medium therapy.

DR. J. W. HEASLOP said that the question of high or low voltage therapy was largely a matter of dosage. In any case deep therapy was always worth trying as the patients were usually beyond all help.

DR. E. S. MEYERS considered that use of the ordinary coil had made most carcinomata seen by him grow very rapidly. Deep therapy could be used in places inaccessible to surgery or radium. He put in a plea for greater cooperation between the surgeon and the radiologist on the question of pre-operative radiation.

DR. J. V. DUHIG stated that in addition to the position of the growth and the type of cell involved, it was also necessary to consider the function of the cell. A cell subserving a higher function was more resistent to the rays than one of lower function.

DR. NISBET in reply to Dr. McDowall said that he quite realized the value of combined radium and deep therapy treatment, but the question of capital outlay had a great deal to do with it and he admitted that he had thought some two years previously that deep therapy alone would be of more general benefit than radium alone.

Regarding the question of penetration of medium and deep rays, he had that morning placed a film under the deep therapy gap; the rays had passed through one millimetre of copper, one millimetre of aluminium, five millimetres of wood, a stout patient, leather couch and the thick wood of the couch, and the plate had been fogged very completely in a few minutes of a distance of about one hundred and fifty centimetres. Also he thought that it ought to be realized that the medium rays were absorbed by the medium tissues and did not reach the deeper parts of the body so completely as the deep rays. For superficial work no doubt they had their uses, but, for a condition such as diseases of the uterus he could not see how anyone could compare the penetrating value of the medium with the deep rays.

There were several measuring instruments which showed this point, the one he used himself being the iontoquantimeter, and if Dr. McDowall would test the penetrating value of his medium rays and compare it with that of the deep rays by this instrument, he would find that there was a very pronounced difference.

Dr. Nisbet mentioned that he had not used the word "cure." The medical men present must remember that the great majority of the patients other than those who came for post-operative treatment, were sent to him when their lesions were inoperable and beyond the reach of any surgical aid.

In reply to Dr. Meyers, Dr. Nisbet mentioned that the question of team work as sugggested was of course to be encouraged.

Regarding the keeping of records, he stated that he was very carefully keeping all records of patients who had undergone deep therapy treatment and if Dr. Meyers and others would do the same with their method of treatment, he would be only too glad to compare them in a few years time. In this way alone were the value of various types of therapy to be compared one with the other.

Lastly, his paper was only an *interim* report written because he thought that medical practitioners should know something of the undoubted advances that had been made in the treatment of neoplasms and if the percentage of good results so far obtained had only been small, at least men must realize that this deep X-ray treatment had been undergone in practically all cases as a last resource.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association:

Beavis, Walter Ramsay, M.B., Ch.M., 1918 (Univ. Sydney), F.R.C.S., 1922 (Edinbugh), 175, Macquarie Street, Sydney.

Byrne, Thomas Patrick, M.B., Ch.M., 1924 (Univ. Sydney), 20, Wemyss Street, Marrickville.

Colwell, Alan Rudford, M.B., Ch.M., 1923 (Univ. Sydney), "St. Luke," Darling Point Road, Darling Point.

Duke, Frederick Reginald Edward, M.B., Ch.M., 1923 (Univ. Sydney), Orange.

Kilgour, Keith Alexander Macaulay, M.B., Ch.M., 1924 (Univ. Sydney), 38, Alt Street, Ashfield.

Walker, William Jack Osmond, M.B., Ch.M., 1924 (Univ. Sydney), Marrickville District Hospital, Marrickville.

NOTICES.

THE HISTORICAL COMMITTEE OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION will be glad to receive any information relative to the personal history and prac-

tice of the medical practitioners of the State of Victoria from the earliest dates to 1880. The loan of documents, photographs and so forth helpful in writing the history of the early Victorian medical men will be greatly appreciated. Communications should be forwarded to Mr. C. Stanton Crouch, Secretary of the Victorian Branch of the British Medical Association, Medical Society Hall, East Melbourne.

Medical Matters in Parliament.

THE medical profession is highly gratified by the announcement that Major-General Sir Neville Howse, V.C., K.C.B., K.C.M.G., has been appointed Minister of Health and of Defence. Since the creation of a Commonwealth Department of Health the Minister of Trade and Customs has been in charge of this department. This arrangement has been a practical continuation of the old order of affairs, since the quarantine functions of the Government were carried out formerly by the Customs Department. On the resignation of Mr. Bowden, the Ministry of Trade and Customs has been freed and has been given to the Honourable H. E. Pratten.

While it would have been preferable had the Department of Health been separated from other departments and its full importance recognized in this manner, the combination of Defence and Health is not an unhappy one. Sir Neville Howse has a great military reputation and is eminently fitted for this important office. As Minister of Health he will have the confidence and undivided support of the medical profession. THE MEDICAL JOURNAL OF AUSTRALIA offers to him its heartiest congratulations.

Obituary.

JOHN EDWARD ANDREW.

THE death occurred on November 6, 1924, of Dr. John Edward Andrew at the age of sixty-eight years.

John Edward Andrew was born at Hemsworth, Yorkshire, England, on February 18, 1856. His father, the Reverend Charles Andrew, was principal of Hemsworth College and at this school the boy John Andrew was given his primary education. In the next phase of his career he enrolled at Bingley Grammar School and eventually entered Owen's College (now known as Victoria University), Manchester.

Shortly after he was admitted as a member of the Royal College of Surgeons of England and a licentiate of the Royal College of Physicians of London, John Andrew came to Australia as ship's surgeon. He settled at Clunes, Victoria, and engaged in practice in that centre from 1878 to 1891, during which period he served as honorary surgeon to the hospitals at Clunes and Amherst.

John Andrew was best known at Hawthorn whither he moved from Clunes in 1891 and remained in practice for twenty-eight years. He retired from active work in 1922, having lived the three preceding years in Brighton.

In the practice of medicine John Andrew devoted special study to obstetrics and the affections of childhood. His principal extra-professional pursuit was reading, in which he took a keen delight.

A widow and family of nine, comprising seven daughters and two sons, remain to mourn his loss and to them the sympathy of the medical profession is extended.

GEORGE AFFLECK SCOTT.

LETTERS by the English mail bring news of the death in Paris after a short illness of Dr. Gerard Affleck Scott, who practised as an oculist in Ballarat for the last twenty-five years.

Born in Scotland, he graduated at Edinburgh University and followed up his studies at Berlin and Vienna, devoting his attention more particularly to ophthalmology. After arriving in Victoria he practised for several years at Maryborough, leaving there to settle in Ballarat as an oculist. He sailed on the *Moldavia* for a visit to Europe, but only reached Paris on his homeward journey.

Affleck Scott was essentially a student, a lover of music and art and equally at home in German and French literature. A reserved man who never courted publicity, he was a staunch and loyal friend, a charming conversationalist and one whose advice and statements were never given without thought and consideration.

As a practitioner he was recognized as a sound and reliable oculist and papers read by him at the meetings of the local "Division" of the British Medical Association were always full of interest and information. He had a very high ideal in medical ethics and was almost quixotic as regards treatment of any patient outside his own specialty. The profession is so much the poorer by the loss of a man of culture, a gentleman and a good citizen.

ROBERT SCOTT.

ALEXANDER STEWART YOUNG.

ON December 4, 1924, the death of Dr. Alexander Stewart Young, of Caulfield, Victoria, occurred at the comparatively early age of forty-four years.

Alexander Stewart Young was born at Scarsdale in the district of Ballarat, Victoria, on February 22, 1880. As a boy he was entered at Ballarat College and on the completion of his school days enrolled as a medical student at the Melbourne University. Diligent in study, he was admitted to the degrees of Bachelor of Medicine and Bachelor of Surgery in 1905 after a very creditable course.

After a short period as resident medical officer to the Kyneton District Hospital, Victoria, Alexander Stewart Young successfully applied for a similar position at the Fremantle Hospital, Western Australia. He subsequently engaged in practice in Western Australia and in South Australia and eventually settled in Northcote, Victoria, where he remained for thirteen years. In 1922 he disposed of his practice at Northcote and moved to Caulfield where he was residing at the time of his death.

Genial in disposition, sound and conscientious in his professional work, Alexander Stewart Young is mourned by a wide circle of patients and friends. The sympathies of the medical profession go out to his widow and four children.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE following has been registered, under the provisions of the *Medical Act, 1912 and 1915*, as a duly qualified medical practitioner:

Phillips, Cecilia, M.B., B.S., 1923 (Nat. Univ. Ireland), Bondi Road, Bondi.

Registration of Additional Qualifications.

Beavis, Walter Ramsay, F.R.C.S., 1922 (Edin.).
Smalpage, Edward Stanley, F.R.C.S., 1921 (England).

Change of Names.

Smalpage, Edward Stanley, to Smalpage, Edward Stanley Henty.
Pyne, Theresa Mary, to Carmichael, Theresa Mary.

QUEENSLAND.

THE undermentioned have been registered, under the provisions of the *Medical Act of 1867*, as duly qualified medical practitioners:

Butler, Walter Mario, M.B., B.S., 1924 (Univ. Melbourne), St. Vincent's Hospital, Toowoomba.

Clune, John Joseph, L.R.C.S., 1921 (Ireland), L.R.C.P., 1922 (Ireland), L.M., 1921 (Ireland), Brisbane.
Cole, Colin Richard, M.B., Ch.M., 1924 (Univ. Sydney), Millmerran.
Connor, William Victor, M.B., Ch.M., 1924 (Univ. Sydney), Brisbane.
Dive, Walter Henry, M.B., Ch.M., 1924 (Univ. Sydney), Toowoomba Hospital.
Cribb, Harold Baynes, M.B., 1924 (Univ. Sydney), Brisbane.
Graff, Roy, M.B., B.S., 1924 (Univ. Melbourne), Brisbane.
Horn, Louis Julius, M.B., Ch.M., 1923 (Univ. Sydney), Kuridala.
Little, John Philip Gregory, M.B., B.S., 1924 (Univ. Melbourne), Brisbane.
Lloyd-Jones, John Richard, L.R.C.P.S., 1890 (Edin.), L.F.P.S., 1890 (Glasgow), L.M., 1890 (Edin. and Glasgow), Brisbane.
Moran, Harold Eldon, M.B., Ch.M., 1924 (Univ. Sydney), Chillagoe.
Powell, Arthur Hunter, M.B., B.S., 1912 (Univ. Melbourne), Toogoolawah.

TASMANIA.

The undermentioned has been registered, under the provisions of *The Medical Act, 1918*, as a duly qualified medical practitioner:

Sutton, Selwyn Bligh, M.B., B.S., 1924 (Univ. Melbourne), Kingston.

Corrigendum.

"DIALECTIN."

OUR attention has been drawn to an error which appeared in the issue of January 10, 1925, under the caption of "Dialectin" among the "Abstracts from Current Medical Literature." The dosage of the drug "Dialectin" is incorrectly stated. Each tablet contains "Dial" 0.1 gramme and allyl-paracetamino-phenyl 0.25 gramme.

Medical Appointments.

THE following have been appointed Resident Medical Officers at the Adelaide Hospital, South Australia: Dr. Charles Mervyn Deland, Dr. Myles Landseer Formby, Dr. Ian Ayliffe Hamilton, Dr. Garton Maxwell Hone, Dr. John Harris, Dr. Raymond Jack Last, Dr. Allan Dunstan Lamphee, Dr. Neill Horace Munday, Dr. Cyril Thomas Piper, Dr. Mary Ethel Hayter, Dr. Harold Mitchell Rees, Dr. Eric John Swann, Dr. Thomas Wilson Tassie.

Dr. Howard Kynaston Denham (B.M.A.) has been appointed Senior Medical Officer, Waterfall Sanatorium, New South Wales.

Dr. Norman St. Clair Mulhearn has been appointed Government Medical Officer at Bellingen, New South Wales.

Dr. F. W. Cotton has been appointed District Medical Officer and Public Vaccinator, Boyup Brook, Western Australia.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi.

ADELAIDE HOSPITAL: Medical Superintendent.
DEPARTMENT OF PUBLIC HEALTH, SYDNEY: Honorary Medical Officer for Baby Health Centre.
RENWICK HOSPITAL FOR INFANTS, SUMMER HILL, SYDNEY: Two Honorary Physicians.
ST. GEORGE DISTRICT HOSPITAL, KOGARAH, SYDNEY: Medical Vacancies.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C..

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

JAN. 27.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
JAN. 28.—Victorian Branch, B.M.A.: Council.
FEB. 3.—Tasmanian Branch, B.M.A.: Council.
FEB. 4 AND 5.—Federal Committee of the British Medical Association in Australia: Meeting at Melbourne.
FEB. 6.—Queensland Branch, B.M.A.: Branch.
FEB. 10.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 12.—Victorian Branch, B.M.A.: Council.
FEB. 12.—South Australian Branch, B.M.A.: Council.
FEB. 13.—Queensland Branch, B.M.A.: Council.
FEB. 17.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 17.—Tasmanian Branch, B.M.A.: Council.
FEB. 24.—New South Wales Branch, B.M.A.: Medical Politics Committee: Organization and Science Committee.
FEB. 25.—Victorian Branch, B.M.A.: Council.
FEB. 27.—Queensland Branch, B.M.A.: Council.
MAR. 3.—Tasmanian Branch, B.M.A.: Council.
MAR. 6.—Queensland Branch, B.M.A.: Branch.
MAR. 10.—Tasmanian Branch, B.M.A.: Branch.
MAR. 12.—Victorian Branch, B.M.A.: Council.
MAR. 12.—South Australian Branch, B.M.A.: Council.
MAR. 13.—Queensland Branch, B.M.A.: Council.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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